

SPRING 2003

# Harvard Medical

ALUMNI BULLETIN



## [DON'T FENCE ME IN]

Spurred by harsh economic realities, physicians are reassessing their profession and lamenting their own loss of freedom





LUMINARY

1962

At Massachusetts General Hospital, Henry Beecher '32 occupied the first endowed chair of anesthesiology in the United States. Among his many accomplishments were his observation of the placebo effect and his advocacy of informed consent rules for ethical clinical research.

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Cover photograph: Christopher Harting



## In This Issue

**T**HE PROBLEM OF MONEY CANNOT BE DISSECTED AWAY FROM THE BODY OF medical knowledge and practice. This is no less true now than it has been for the better part of human history, although before around 1900 wealth was a largely nonspecific factor promoting health. Since then medical care has become an intrinsically valuable commodity, not just a risky and unpleasant form of conspicuous consumption (just how risky and unpleasant is compellingly conveyed in the excellent play and film *The Madness of King George*).

In the capitalist democracy that has evolved from King George's rebellious colonies, the rising costs of medicine are precipitating a crisis that is unlikely to resolve itself in the easily foreseeable future, for reasons both economic and political. To begin with, medical care is consuming an increasing fraction of the GDP. This may or may not be a bad thing. At a cost approaching 15 percent of all the goods and services we produce each year, health care probably gives relatively good value for the money—at least as compared with SUVs, duct tape in some applications, and most of the available intoxicants. The purchase of health care, however, is really not comparable to any of the usual ways of spending money. One can always choose whether to buy a vacation home; buying a bone marrow transplant is rarely perceived to be optional when the occasion presents itself. Moreover, comparison shopping is difficult for experts and all but impossible for the typical consumer.

The rising cost and increasing value of health care have proved to be irresistible forces colliding with seemingly immovable American political values and interest groups. The reality is that the only way to manage expenditures on health care is through some form of shared financing and collective decision making. Treating health care purely as a problem for the market would soon look like murder. But the prospect of a comprehensive solution requiring collective action and shared sacrifice seems ever more remote in a political climate in which lower taxes and less government have emerged as the most fundamental values.

I would predict that physicians, however they vote, are going to find themselves in an increasingly uncomfortable position, *seeming* to control—or at least to influence in an important way—the quality and allocation of health care while in reality having a negligible influence on one of the most critical variables affecting their patients' health and prospects for recovery: the circulation of money through the health care system.

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## Wave of the Wand

The Autumn 2002 issue of the *Bulletin* perpetuates the confusion between the symbols for communication and medicine. On page 22, in connection with the article "Doctoring Evil," is pictured a fanciful rendition of the caduceus, the winged wand of Hermes (Mercury), messenger of the gods. This is the icon of commerce and communication.

Obviously a symbol of the medical profession is intended. That would be a stout staff of Aesculapius, legendary healer. A large serpent entwines his staff, since in ancient Greece snakes were thought to play a role in healing.

It is true that countless clinics and medical publications are adorned with Hermes's wand. And, as Dan Federman '53 emphasizes, communication with our patients is essential. Nevertheless, let us keep our icons straight.

FRITZ LOEWENSTEIN '53  
BINGHAMTON, NEW YORK

*Editor's note:* Alas, we should have held the image for this issue, which focuses on the intersection of medicine and commerce.

## On the House

We bought our house in 1972, and along with other pleasures of living here has been the *Bulletin*. It has been sent to Dr. Kurt Toma all this time, as well as to the previous owners who were not Dr. Toma and his wife. Since we are selling the house in the fall, you should cancel Dr. Toma's subscription.

We had a wall clock that was ill and we sent it to a clockmaker for repairs. When he returned to hang the clock, his father, a retired clockmaker, came along. Well, the father knew the house, as he had been here decades before to repair Dr. Toma's clock. He told us that Dr. Toma, a dentist, was the only honorary member of the medical school alumni association—small world.

MARION MASON, PHD  
WESTON, MASSACHUSETTS



## TOUTING THOMAS

Five members of the famous Class of 1937 made the obituary pages of last autumn's issue of the *Bulletin*! As this list gets longer and our little red class report gets smaller, I wonder how long it will take to achieve oblivion. In December, it will be ten years since Lewis Thomas '37 died, and I was glad to read in the *Bulletin* that he and his poem "Allen Street"—inspired by our Second Year Show and published in the 1937 *Aesculapiad*—are still remembered. As many of you may know, Massachusetts General Hospital used its back door—which opened out onto Allen Street—to discharge patients headed for the morgue.

HENRY H. WORK '37  
BETHESDA, MARYLAND

## ~ ALLEN STREET ~

### CANTO I: Prelude

*Oh Beacon Street is wide and neat, and open to the sky—  
Commonwealth exudes good health, and never knows a sigh—  
Scollay Square, that lecher's snare, is noisy but alive—  
While sin and domesticity are blended on Park Drive—  
And he who toils on Boylston Street will have another day  
To pay his lease and live in peace, along the Riverway—  
A thoroughfare without a care is Cambridge Avenue,  
Where ladies fair let down their hair; for passersby to view—  
Some things are done on Huntington, no sailor would deny,  
Which can't be done on battleships, no matter how you try—  
Oh, many, many roads there are, that leap into the mind,  
(Like Sumner Tunnel, that monstrous funnel, impossible to find!)  
And all are strange to ponder on, and beautiful to know,  
And all are filled with living folk, who eat and breathe and grow.*

### CANTO II

*But let us speak of Allen Street—that strangest, darkest turn,  
Which squats behind a hospital, mysterious and stern.  
It lies within a silent place, with open arms it waits  
For patients who aren't leaving through the customary gates.  
It concentrates on end-results, and caters to the guest  
Who's battled long with his disease, and come out second-best.*

(continued on next page)

(continued from previous page)

*For in a well-run hospital, there's no such thing as death.  
There may be stoppage of the heart, and absence  
of the breath—*

*But no one dies! No patient tries this disrespectful feat.  
He simply sighs, rolls up his eyes, and goes to Allen Street.  
Whatever be his ailment,—whate'er his sickness be,  
From "Too, too, too much insulin," to "What's this in his pee?"  
From "Gastric growth," "One lung, (or both)," or "Question  
of Cirrhosis"*

*To "Exodus undiagnosed," or "Generalized Necrosis,"  
He hides his head and leaves his bed, and covered with a sheet,  
He rolls through doors, down corridors, and goes to  
Allen Street.*

*And there he'll find a refuge kind, a quiet sanctuary,  
For Allen Street's that final treat—the local mortuary.*

### CANTO III

*Oh, where is Mr. Murphy with his diabetic ulcer,  
His orange-red precipitate and coronary?*

*Well, sir,*

*He's gone to Allen Street.*

*And how is Mr. Gumbo with his touch of acid-fast,  
His positive Babinskis, and his dark luctic past?  
And what about that lady who was lying in Bed Three,  
Recently subjected to such skillful surgery?  
And where are all the patients with the paroxysmal wheezes?  
The tarry stools, ascitic pools, the livers like valises?  
The jaundiced eyes, the fevered cries, and other nice diseases?  
Go! Speak to them in soothing tones. We'll put them on  
their feet!*

*We'll try some other method, some newer way to treat—*

*We'll try colloidal manganese, a diathermy seat,*

*And intravenous buttermilk is very hard to beat—*

*We'll try a dye, a yellow dye, or different kinds of heat—*

*But get them on their feet—*

*We'll find some way to treat—*

*I'm very sorry, Doctor, but they've gone to Allen Street.*

### CANTO IV

*Little Mr. Gricco, lying on Ward E,  
Used to have a rectum, just like you or me—  
Used to have a sphincter, ringed with little piles.  
Used to sit at morning stool, face bewreathed with smiles,  
Used to fold his Transcript, wait in happy hush  
For that minor ecstasy, the peristaltic rush..  
But in the night, far out of sight, within his rectal stroma,  
There grew a little nodule, a nasty carcinoma.  
Oh, what lacks Mr. Gricco?—Why looks he incomplete?  
What is this aching, yawning void in Mr. Gricco's seat?  
Who made this excavation? Who did this foulest deed?  
Who dug this pit in which would fit a small velocipede?  
What enterprising surgeon, with sterile spade and trowel,  
Has seen some fault and made assault on Mr. Gricco's bowel?  
And what's this small repulsive hole, which whistles like  
a flute?*

*Could this thing be colostomy—this shabby substitute?  
Where is this patient's other half? Where is this patient's seat?  
Why Doctor, don't you recollect? It's gone to Allen Street.*

### CANTO V: Footnote

*At certain times one sometimes finds a patient in his bed,  
Who limply lies with glassy eyes receding in his head.  
Who doesn't seem to breathe at all, who doesn't make  
a sound,  
Whose temperature is seen to fall, whose pulse cannot  
be found.  
And one would say, without delay, that this is a condition  
Of general inactivity—a sort of inanition—  
A quiet stage, a final page, a dream within the making—  
A silence deep, an empty sleep without the fear of waking—  
But no one states, or intimates, that maybe he's expired,  
For anyone can plainly see that he is simply tired.  
It isn't wise to analyze, to seek an explanation,  
For this is just a new disease, of infinite duration.  
But if you look within the book, upon his progress sheet  
You'll find a sign within a line—"Discharged to  
Allen Street."*

The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-384-8901); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.

## My Big, Fat Distal Swelling

**W**HEN THE CURTAIN ROSE ON this year's Second Year Show, "My Big, Fat Distal Swelling," the Class of 2005 explored what would happen if Nancy Oriol '79, associate dean for student affairs, were to gamble away the HMS endowment during an evening of dancing and drinking. The day after this disastrous night on the town, as Oriol nurses a hang-over, Dean Joseph Martin assembles the faculty to inform them that the School's pockets are "emptier than a New Pathway classroom in April." Dean Martin has a plan: In addition to requiring all faculty members to donate an organ from their own bodies that corresponds to the disciplines they teach (a request roundly refused by the cardiologists), Martin announces a competition: Because the School has only enough money to fund one department, the one that attracts the most students will be the sole survivor.

Thus begins a whirlwind tour of HMS departments, with each struggling to attract students in its own way. In the anatomy classroom, professors sing the praises of the pass/fail option. Students favoring pathology face off against fans of endocrinology—clad in rubber boots, T-shirts, and bandanas, they stomp and clap rhythmically while shouting back and forth, "Patho!" "Endo!" Immunology, cardiology, and neurology students engage in a dance competition, featuring hip hop, traditional Indian dance, and swing numbers. And a group of male professors form a boy band, 'NSITU, while their female counterparts hit the stage as the Splice Girls.



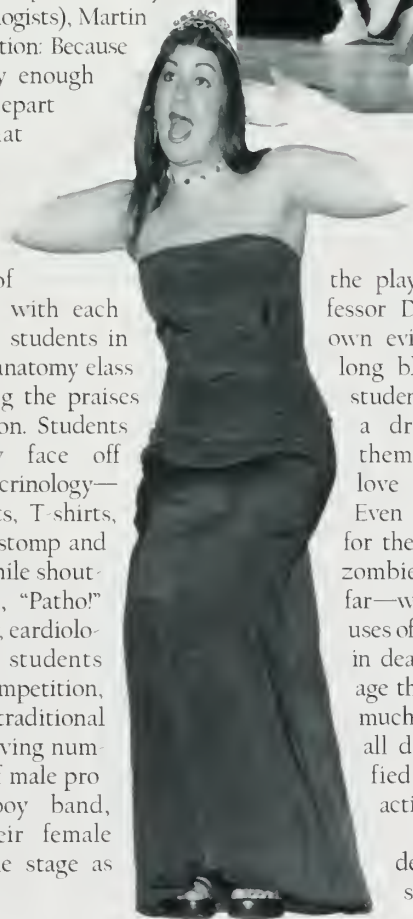
**STEPPING OUT:** From sprightly swing dancers to a coy and pampered Material Girl, second year students pulled out all the stops to celebrate student life at Harvard Medical School.

But the villain of the play, pharmacology professor David Golan, has his own evil designs. Clad in a long black cape, he serves students pizza spiked with a drug that transforms them into zombies who love only pharmacology. Even Golan isn't prepared for the results, though. The zombies take things too far—when quizzed on the uses of new drugs, they reply in deadened unison: "Package the drug and charge as much as possible so we can all drive Bentleys." Horrified, Golan regrets his actions.

It's left to the one student who didn't eat the spiked pizza to find

the antidote and bring the students back to life, with the help of a tutorial group. While the fearless leader of the tutorial is anything but (to the tune of "Maria" from *The Sound of Music*, she sings, "Why did I think I'd want to teach New Pathway? / Why did I think they'd ever want to learn?"), the students eventually develop the antidote, which has the unexpected side effect of curing male pattern baldness. With the money they make from selling the baldness cure, the students are able to re-endow the school and leave the audience with a happy ending.

"I'm grateful to have been part of the Second Year Show with a group of people who, thanks to the show, have become lifelong friends," says producer Alejandra Casillas '05. "Being part of this show was one of the most rewarding and memorable experiences of my medical school career." ■





## The Future of Biotech Is Now

**L**ABORATORIES OFTEN PROMISE hands-on experience, but the term falls short when applied to Hugh Herr's demonstration of the prosthetic Otto Bock C-Leg at a March symposium held by the Harvard-MIT Division of Health Sciences and Technology (HST). Judging by the participants' faces as Herr, who lost both legs below the knee in a mountain-climbing accident, strode around in the prosthesis that he and colleagues invented, the workshop was both inspiring and stirring.

One of the lessons that emerged from the symposium, "Experiencing the Frontiers of Biomedical Technology," is that HST is driven by a passion to help patients and that its work is central to their needs. Giving people a feel for its mission was part of the more general symposium goal of helping people understand how biotechnological advances actually occur.

"There is a method, a paradigm that cannot be taught in a classroom or read in a book—it needs to be taught by doing," says Elazar Edelman '83, HMS associate professor of medicine at MIT and Brigham and Women's Hospital. "You cannot give people an appreciation for technology without *doing* technology." Working on the model of the high school physics class, Edelman had the idea to launch a series of symposia in which people could first see how scientists approach biomedical problems, and then try it for themselves. The first symposium was held last year.

This year's workshop by Herr, HMS instructor in physical medicine and rehabilitation at MIT, was part of a larger ses-

sion on "The Human Hybrid: Human-Machine Systems." Symposium attendees, who included venture capitalists, chief executive officers, lawyers, and graduate students, also had the opportunity to attend sessions on drug delivery systems, tissue engineering, hybrid biological microdevices, and informatics—topics that, according to Edelman, are "on the tips of people's tongues."

What made Herr's leg demonstration even more powerful was the recog-

nition, driven home earlier in the session by Steve Massaquoi '83, HMS instructor in neurology at Massachusetts General Hospital, that lifelike mechanical devices begin as two-dimensional conceptual models. Massaquoi, whose own interest is in neuromuscular prosthetic devices—artificial cochleas, retinas, and vestibular systems, as well as brain stimulation for people with movement disorders—had students work on a simple computer

model to understand how the brain controls their own arm movements.

Herr, who worked on the Otto Bock C-Leg, particularly the knee joint, for five years, also began with simpler models and worked his way up to robots. "Making robots work sometimes shows us how we work," he said. "If we can build a robotic leg, we might build a prosthetic leg." The knee owes its lifelike motion to microprocessors that monitor and anticipate the user's actual movements. But it is a passive device. Herr hopes eventually to power the knee not with mechanical motors but instead with muscle. He has already developed a tiny fishlike robot that swims by means of impulses generated by an attached slice of laboratory-grown muscle.

"One can imagine a future in which artificial appendages may be hybrid or cyborg—though I hate to use that word—devices," Herr says. "This may sound like science fiction, but everything is here today to do what I am describing." ■

Misia Landau is the senior science writer at Focus.

PHOTO: IZA GREEN



**PRACTICAL MAGIC:** "If we can apply greater energy flow and control it intelligently, the physically disabled person will really benefit," says Hugh Herr (right). Here he demonstrates the Otto Bock C-Leg at the Health Sciences and Technology symposium.



## Retrofitting the School

**M**ALCOLM COX '70 HAS BEEN named the new dean for medical education at HMS. Cox most recently served as associate dean for clinical education at the University of Pennsylvania School of Medicine. In his position there, he was a key advocate and participant in a major curriculum reform effort that closely parallels the ongoing efforts at HMS.

"A commitment to public, as well as individual, health must become the very core of medical professionalism," Cox says. "Harvard has a large and distinguished faculty, which has recently rededicated itself to exploring new ways of educating physicians in the twenty-first century. I'm delighted to be returning as dean for medical education at a time of creative tumult."

"I am extremely pleased that Malcolm Cox is joining Harvard Medical School as our new dean for medical education," says Joseph Martin, dean of HMS. "His dedication to excellence in teaching and his experience in the development and improvement of the medical school curriculum make him an ideal choice for this position. With his administrative experience as chief of the medical service at the Philadelphia VA Medical Center and, more recently, in the University of Pennsylvania Dean's Office, he will bring new and needed leadership that will be invaluable in planning our new initiatives in medical education."



**MALCOLM IN THE MIDDLE:** Cox will oversee the ongoing process of curriculum reform at HMS.

Cox completed his postgraduate training in internal medicine and nephrology at the University of Pennsylvania, where he had spent most of his professional career and where he had been a professor of medicine since 1991. His scholarly interests include kidney diseases, medical education, and health policy. Cox has lectured extensively on community-based primary care education as well as the content, governance, and financing of medical education. He has received numerous honors and teaching awards at the University of Pennsylvania. ■

### THE STREAK GOES ON

FOR THE 14TH CONSECUTIVE YEAR, *U.S. News and World Report* has rated HMS the top research-intensive medical school in the nation, according to its recently released 2004 ranking of graduate schools. The School tied for 17th among primary care-intensive medical schools.

Schools also were ranked by medical specialties. As it did last year, HMS ranked number one for internal medicine, pediatrics, and women's health. It captured the number two spot in drug and alcohol abuse, the number three spot in AIDS, and the fifth spot in geriatrics. ■

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# PRESIDENT'S REPORT

**W**ITH THE MOVE OF MALCOLM Cox '70 from the University of Pennsylvania to HMS as the new dean for medical education, the already intense focus on education revs up another notch. The New Pathway, a pioneering development two decades ago, is no longer new, and thus warrants reconsideration and renewal. Surely basic science calls for thoughtful review of how its burgeoning nature and content are best taught and learned and how it relates to bedside and office practice, issues of public health, and the ethical dilemmas that are its offspring.

As for clinical medicine, the frenetic delivery systems created by contemporary payment modalities and strictures have led to a fragmentation of care, increasingly undermining the admonition of Francis Peabody '07 that "the secret of the care of the patient is in caring for the patient."

A patient may be seen in the office by his or her primary physician, where the workup of the complaint proceeds on an ambulatory basis until a diagnosis is reached. Or the patient may be seen in the emergency unit by another set of clinicians and end up under the care of yet others—the hospitalists—for an all-too-brief inpatient stay. Students and house officers often have little opportunity to get to know such a patient, much less experience the spectrum of that patient's illness from the initial complaint and workup to the point of appropriate treatment and its unfolding consequences.

This disjointed scenario also means less opportunity for students to experience senior clinician-teachers as role models, at least over time and in a variety of clinical circumstances and related interactions with patients and family members. Yet our responsibility is to teach not only the content of medicine, but also how to be a physician, which is best taught by example.

Daniel Lowenstein '83, who recently stepped down as dean for medical

education, has commented that one major task ahead is to deal with the downside of the School's enjoying its primary affiliation with several major teaching hospitals. Because clinical education is not coordinated centrally to the extent it should be, we lose the benefit of that diverse talent and thoughtfulness working fully together to make the whole greater than the sum of its parts. And within each hospital, little continuity exists between the overview of undergraduate teaching and that of the learning experience of house staff years.

Fortunately, there is ferment here at HMS, a growing sense of the need to deal with these issues. The creation of the Academy at HMS—which recognizes and creatively uses a special cadre of faculty devoted to teaching—and the work of the Carl J. Shapiro Institute for Education and Research—a joint venture of HMS, Beth Israel Deaconess Medical Center, and Mount Auburn Hospital—represent some of the results of that ferment. And under the leadership of Dr. Cox and Dean Joseph Martin, we can anticipate further progress in the months ahead.

\*\*\*\*\*

Last year around this time, we sent letters to alert alumni of the arrival of members of the Class of 2002 as house officers at their respective hospitals. Today, we simply ask you to keep an eye out for incoming residents from HMS '03 and, if you can, extend a welcoming hand. The life of a resident is more stressful today than ever before, and a reassuring welcome will be greatly appreciated. ■

*Mitchell T. Rabkin '55 is an Institute Scholar at the Carl J. Shapiro Institute for Education and Research at HMS and the Beth Israel Deaconess Medical Center, as well as chief executive officer emeritus of Beth Israel Hospital and CareGroup.*



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## SAVE THE DATE

### THE SCOPE OF VACCINES

The Third Annual Hollis L. Albright '31 Symposium will feature "The Scope of Vaccines in Our Present and Our Future: Challenges and Controversies" on October 7, 2003, from 4:00 to 6:00 p.m. in the Daniel C. Tosteson Medical Education Center at Harvard Medical School. Joseph Martin, dean of HMS; Daniel Federman '53, senior dean for alumni relations and clinical teaching at HMS; and Dennis Kasper, executive dean for academic programs at HMS, will be joining Gory Nobel '79, director of the Vaccine Research Center at the National Institutes of Health, and a panel of other experts.

For more information, contact Tenley Albright '61 at 617-247-8202 or [tenley1003@aol.com](mailto:tenley1003@aol.com).



## On Patient Advocacy

I WOULDN'T WANT THE SURGERY EITHER, I THOUGHT, as the elderly woman was whisked off to the operating room. Ms. H. was a portly 70-year-old with schizophrenia and mild mental retardation. Talking to her casually, though, you wouldn't have guessed these diagnoses; she was lucid, with a subtle, at times sarcastic, sense of humor.

Initially admitted for chest pain, she ruled in for a myocardial infarction, and a cardiac catheterization revealed three-vessel disease. As members of the psychiatric consultation-liaison service, we were asked to evaluate her for post-cath delirium. And delirious she was, at least for the first 24 hours. With the tincture of time, and a few cc's of haloperidol, she eventually came around. The cardiothoracic surgeons decided she was a candidate for triple coronary artery bypass grafts and were aiming for surgery by week's end. Ms. H. was demurring, however, and we were asked to evaluate her capacity.



I would have done something. I feel responsible not for a “wrong” medical decision, but for not being a stronger advocate for my patient’s wishes.

My evaluation agreed with that of the attending physician: Ms. H. possessed the capacity to make decisions about her care. She understood the reason for the surgery, its attendant risks, and the risks involved in not proceeding. She nevertheless refused the surgery. She was afraid, as anyone might be, at the thought of open-heart surgery. She agreed, though, to allow us to continue discussing it with her, as she was not completely closed to the idea. Apparently the dialogue did continue, as next I heard she had agreed to the surgery, but wanted to go home for a few days to take care of some matters, including taping an upcoming performance of the musical *Hansel and Gretel*. This stated priority disturbed the surgeons, who believed that it revealed a lack of capacity. They feared she might not return if allowed to leave the hospital. Given her capacity, though, she was not held against her will.

A week later she reappeared for the surgery. Sadly, her post-op course was complicated. Seventy-two hours after surgery, she was weaned off the ventilator but remained comatose. Her fate was not yet sealed, but her prognosis was not good.

People with experience far greater than my own had believed at the time that the surgery was the right decision.

Nevertheless, I wondered whether a 70-year-old woman, with an average remaining life expectancy of less than a decade, might have deserved the right to have her initial refusal taken more seriously. Did her diagnosis of schizophrenia and the label of mental retardation affect the willingness of the medical establishment to give her refusal proper consideration?

From conversations with others involved in the case, I think the answer, unfortunately, is yes. The fragmentation of medicine—and of patient care—among a growing number of specialists is inevitable, but its disadvantages became clearer to me during this experience: critical medical decisions are increasingly being put in the hands of people with less and less familiarity with the patients themselves. Ms. H. had no family to speak for her, no friends to support her decision against surgery. It was her opinion against those of the surgeons.

Who knows what her course would have been had she not undergone the surgery? Regardless of her outcome, I feel a

sense of responsibility. It was not the first time that I had failed to speak up or act on a patient's behalf when my instinct told me to—either because of my position as a student, or, as in this case, because I was a member of a consult team uninvolved with the aspect of care in question. I'm not sure exactly what I could have done that might have made a difference, but had I listened to my intuition, I would have done something. I feel responsible not for a “wrong” medical decision, but for not being a stronger advocate for my patient's wishes. Perhaps if I had, she would now be comfortably ensconced in her La Z-Boy watching *Hansel and Gretel*.

I see two things more clearly now: The first is the effect of psychiatric diagnoses like schizophrenia and mental retardation on the attitudes and decisions of health care professionals. The second is that we can—and sometimes should—advocate for certain aspects of a patient's care even when, as is increasingly the case in today's medical environment, they lie outside our specific purview; if done with appropriate tact and humility, patients only stand to benefit. ■

Ariel Weissmann '04 is a student at Harvard Medical School.

## The Trojan Women

*A Play by Euripides, Translated from the Greek into English and Adapted in Response to Aristophanes' and Aristotle's Criticism by Howard Rubenstein '57 (Granite Hills Press, 2002)*

**A**LTHOUGH ITS TITLE IS AS LONG AS AN ORGANIC compound, there is not one lab reference, urinalysis, or frankly medical thought in this small book. And although the translator is a retired internist, he takes his topic far from medicine (but not all that far from general human health). "Perhaps," Howard Rubenstein '57 writes in his introduction, "if a theater company in every major city of the world were to produce *The Trojan Women* at least once a year, we might be closer to establishing world peace." Mankind saved: not through vaccination, but through art. Thoughts like this must be attended.

Put down your *JAMA*, your *New England Journal of Medicine*, your office copy of *Entertainment Weekly*. Sign the beeper out. Find a chair that sags. Remember years ago, before the era of CMEs, when you read for passion? Remember noble struggles and enmity, the grave absolutism of characters who knew themselves to be right when we feared they were wrong, and sorrows beyond sorrow? You don't?

Read *The Trojan Women*. The play was first performed in 415 B.C. as part of an Athens drama competition. It hasn't disappeared since then; it is we who have left it behind, maybe because it is easy to read but difficult to absorb. These deep Grecian griefs and losses need to sink slowly through to the bones, while in modern times we often fly efficiently over emotion altogether.

The plot is simple and catastrophic. It is a day or so after the end of the Trojan War (remember? ten years of brutal war to reclaim the faithless Helen?). Trojan women have been herded into a prisoner-of-war camp. Each will be given to a different Greek leader—a bit of war booty—and borne off to Greece. Their husbands and sons are dead. They have been torn from their families. Now they sit and wait to be torn from their country.

The ministering presence who waits with them is Hecuba. A week earlier, she had been Queen of Troy. The women turn to her now because, even in chaos, social order perseveres. But she is preoccupied. She, too, has lost all the corners of her kingdom. Her husband the king and her sons have been killed. One of her daughters is being murdered offstage as the

play opens. Her grandson will be thrown off a tower before the first act ends. Her mad child will be torn from her and given to Agamemnon, the Greek commander. Still, the women turn to her. Hers are the eyes that watch history. "In the end, everything came to nothing. / And I witnessed it all."

I read the play late at night, nursing a cold and full of viral annoyance. My own family was sleeping upstairs. The cats wandered by, intrigued by the possibility of company, then stretched and slept where they fell. Life is always good to them.

I read lightly at first, skimming, as if the book were an abstract. By the end of Act I, though, the losses were so staggering, the heroism so acute, the die cast so bloodily, it was physically hard to bear. I thought: I can't finish this. These kinds of emotions are aerobic; they tax the heart; they need to be practiced.

To distract myself, I picked up an old mythology reference—lo, a handy doorstop all these years since college. I looked up Helen and Paris, then mad Cassandra and her fate, then the Trojan War itself, and that devious, irresistible Horse. Next thing I knew, I was reading a Tennyson poem about Iphigenia's sacrifice and looking at photos of ancient sculptures of Hector. Doors swung backward onto other doors filled with adjunct forms of art. I understood why an internist would devote his days to translating Greek plays—because thought, feeling, history, and content are a salvation from the arid forms of life that busy us today.

In the play, of course, there was no salvation. The promised occurs without reprieve. The Trojan Women are borne, bodily apart but spiritually assembled, as Hecuba says, "forward into the new day of slavery."

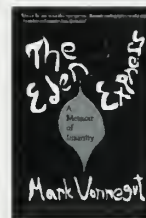
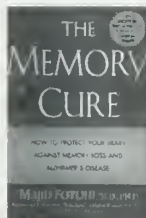
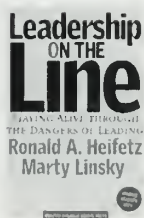
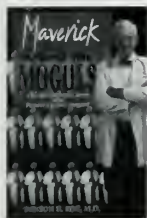
Yet they are also born, e-less, into meaning. "If God was not tormenting us / and torturing us / and dashing us to the ground," Hecuba muses, "no one would ever hear of us. / We would remain unsung forever / instead of giving everlasting themes / in poetry and music / to future generations."

This, I think, is the point—of the play, and also of a physician who has taken the trouble to translate it after decades of reviewing lab values. We live to be moved: by one another, by loss and heroism, by characters who say, in a thousand different circumstances and through a thousand different forms of expression, I can't go on, but I do. Their lives save ours. Find what you care passionately for, and use it to rescue mankind. Witness it in everlasting manner. Sing about it. Dance it up. At the very least, put down your PalmPilot, please, and read. ■

*Elissa Ely '88 is a lecturer on psychiatry at HMS.*







## Maverick Among the Moguls

*The Adventurous Career of a Pioneer Cardiac Surgeon*, by Benson B. Roe '43A  
(Creative Arts Book Company, 2002)

Not originally intending to become a physician, Roe explains how he "backed into" medicine and took on a pioneering role in the early development of cardiac surgery. His memoir offers insight into his clinical work, his contributions to an artificial heart project, and his efforts to tackle controversial issues in the country's surgical politics.

## Drama and Discovery

*The Story of Histoplasmosis*, by Thomas M. Daniel '55 and Gerald L. Baum  
(Greenwood Press, 2002)

Basing their account on original and previously unreported source material, the authors tell the story of the fungal disease histoplasmosis, discovered in Panama in 1905. They trace the development of knowledge about the disease's etiology, pathogenesis, epidemiology, diagnostic challenges, clinical manifestations, and treatment.

## Leadership on the Line

*Staying Alive Through the Dangers of Leading*, by Ronald A. Heifetz '77 and Marty Linsky  
(Harvard Business School Press, 2002)

This "personal survival book" discusses qualities that leaders will find useful to

cultivate. The book also answers two key questions: How do one's actions as a leader cause resistance, and how does one effectively deal with that resistance? The authors examine the personal and professional dangers of leadership, and suggest ways to manage personal vulnerabilities and care for oneself while leading others.

## The Memory Cure

*How to Protect Your Brain Against Memory Loss and Alzheimer's Disease*, by Majid Fotuhi '97 (McGraw-Hill, 2003)

The author summarizes the latest scientific studies in the field of memory research, explains the basics of the brain, and identifies the key features that distinguish Alzheimer's disease from the normal forgetfulness that comes with aging. He debunks myths about Alzheimer's and aging, and offers a ten-step memory protection plan to help minimize and delay the early onset of memory loss or Alzheimer's disease.

## Setting Limits Fairly

*Can We Learn to Share Medical Resources?* by Norman Daniels and James E. Sabin '64  
(Oxford University Press, 2002)

The authors tackle the lack of consensus on principles for allocating health care resources fairly. They suggest four conditions under which it is ethically acceptable for health care institutions to set limits on care, collectively termed "accountability for reasonableness": publicity, relevance, appeals, and regulation.

The authors then consider these conditions in a variety of health care contexts, including insurance coverage for new technologies, pharmacy benefit management, and physician incentives.

## The Eden Express

*A Memoir of Insanity*, by Mark Vonnegut '79  
(Seven Stories Press, 2002)

In 1971, Mark Vonnegut was committed to a psychiatric hospital to be treated for schizophrenia. The book is an account of his descent into mental illness and his eventual emergence to become a practicing physician at Massachusetts General Hospital. Twenty-five years after its first publication, this memoir contains a new foreword by the author's father, writer Kurt Vonnegut, and a new preface by the author.

## Mind Over Fatter

*A Seven-Step Mind-Body Program for Permanent Fitness and Weight Control*, by George R. Smith, Jr. '53  
(Rutledge Books, 2002)

Of the seven steps in this slim, simple volume, only two are devoted solely to food and exercise. The other five focus on strategies for developing a clear vision of one's desired weight and lifestyle and for maintaining that focus. The author includes a detailed account of his own daily program and a series of progress logs designed to help readers follow the recommendations for achieving weight control.



## Pressure Cooker: Protein Implicated in Preeclampsia

**P**REECLAMPSIA, A COMPLICATION OF PREGNANCY CHARACTERIZED by hypertension, edema, and protein in the urine, afflicts 5 to 8 percent of pregnant women and is the leading cause of maternal death worldwide. Because it often compels premature delivery to save the mother, it is also a major cause of infant mortality in developing countries. ¶ The cause of preeclampsia has

remained mysterious, and it has even been dubbed “the disease of theories.” Now, researchers at HMS and Beth Israel Deaconess Medical Center (BID) have made a major advance by identifying a protein that may lead to the development of preeclampsia by blocking the activity of two angiogenic growth factors, vascular endothelial growth factor (VEGF) and placental growth factor (PlGF). The discovery sheds light on the etiology of the disease at the molecular level, points toward further research on its ultimate causes, and suggests potential early diagnosis and treatment strategies.

“Currently, there is no treatment for this condition,” also known as toxemia of pregnancy, says S. Ananth Karumanchi, HMS assistant professor of medicine at BID and senior author of the report in the March 3 issue of the *Journal of Clinical Investigation*. “The only management we can

offer patients is to deliver the baby and the placenta.” Preeclampsia typically develops after the 20th week of pregnancy and can rapidly progress to full-blown eclampsia with kidney failure, seizures, and other life-threatening complications.

Co-author Franklin Epstein, the William Applebaum Professor of Medicine at HMS and BID, adds that although typically thought of as an obstetric problem, “Preeclampsia is also the world’s most common renal disease—and too little attention has been paid to this fact.”

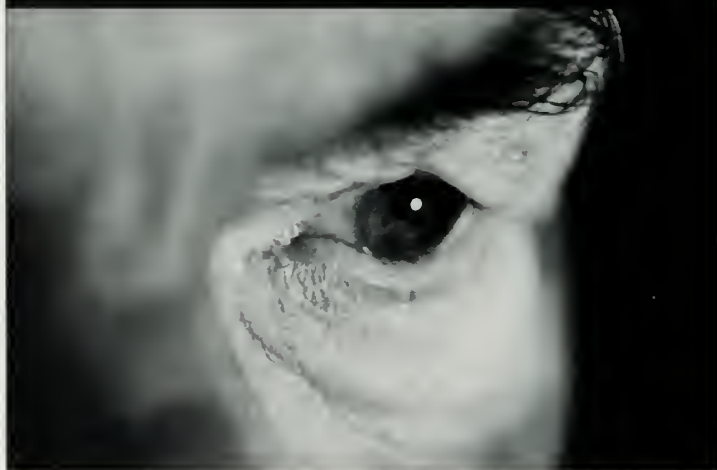
A nephrologist, Karumanchi’s interest in preeclampsia comes from the observation that the glomerulus—the kidney’s filtration apparatus—is pathologically affected in this disease by glomerular capillary endotheliosis, in which endothelial cells become swollen and block the capillaries, which is believed to cause protein leakage into the urine.

When a pregnancy proceeds normally, the network of blood vessels to the placenta is remodeled to supply increasing oxygen and nutrients to the fetus. But in preeclampsia, the placental blood supply is instead reduced. Scientists have long speculated that this placental ischemia leads the placenta to release something into the maternal circulation, triggering the harmful events in the mother’s kidney, liver, blood, and nervous system.

To identify this unknown factor, Karumanchi and colleagues took placental tissue from healthy and preeclamptic women and used microarray gene-expression profiling to see which genes were up- or downregulated in preeclamptic patients. Finding many differences in gene expression, they focused on upregulated genes that encoded secreted proteins. One of these turned out to be soluble fms-like tyrosine kinase 1 (sFlt1), a VEGF receptor that blocks the growth factor’s activity. VEGF is an important angiogenic factor both in health and disease. In cancer, excess VEGF helps tumors grow new blood vessels, and VEGF signaling inhibitors are in development as anticancer drugs.

Karumanchi shared the microarray data with his co-author and mentor Vikas

## EYE SPY



**THE AMYLOID-BETA PROTEIN THAT FORMS PLAQUES IN THE BRAINS** of people with Alzheimer’s disease also shows telltale patterns in the lenses of their eyes, a discovery that could lead to tests for diagnosing and monitoring the disease. The study, published in the April 12 issue of *The Lancet*, was led by investigators at Massachusetts General Hospital and HMS.

“The formation of A-beta plaques in the brain and the development of cataracts in the lens are both examples of accumulated protein associated with age-related degenerative damage,” says lead author Lee Goldstein, HMS assistant professor of psychiatry at MGH. “In addition, people with Down syndrome, who develop Alzheimer’s at an early age, are also prone to early-onset cataracts. But as far as we know, no one had investigated whether there might be any association



Preeclampsia typically develops after the 20th week of pregnancy and can rapidly progress to full-blown eclampsia with kidney failure and other life-threatening complications.

Sukhatme '79, chief of BID's Renal Division. Sukhatme knew that an anti-VEGF antibody being used in cancer therapy was causing hypertension and proteinuria in about 30 percent of patients. Checking with his oncology colleagues, he found that cancer patients treated with two unrelated VEGF inhibitors were developing similar symptoms.

"That was the 'aha' moment," Sukhatme says. If three different drugs affecting VEGF signaling produced hypertension and proteinuria, sFlt1 might do the same if it crossed from the placenta into the maternal circulation.

Seeking evidence that this is, in fact, what happens, first author Sharon Maynard, a renal fellow in Karumanchi's laboratory, found higher sFlt1 concentrations in the blood of preeclamptic women than in healthy pregnant women, which dropped within 48 hours of birth. And Jaime Merchan, an oncologist in Sukhatme's laboratory, showed that blood from preeclamptic women blocked vessel growth in an in vitro angiogenesis assay and that treatment with VEGF or PlGF reversed this inhibition.

To test the idea in vivo, the researchers then injected sFlt1 into pregnant rats. "The

resulting data was exciting," says Karumanchi. "The rats exposed to sFlt1 had distinct clinical and pathological symptoms of preeclampsia—including the characteristic endotheliosis—demonstrating for the first time a clear cause and effect relationship between this protein and this disease." It appears that sFlt1 "mops up" VEGF and PlGF, he says, and the loss of growth factors damages the mother's small blood vessels, leading to the diverse symptoms of preeclampsia and eclampsia.

"This research will now evolve in several different directions," Karumanchi says. "First, we need to understand why sFlt1 is upregulated in preeclampsia." Genetic, immunologic, and environmental factors will all need to be examined, he says, and maternal-paternal antigenic incompatibility may play a role.

"Second, it will be interesting to see if measurement of blood sFlt1, VEGF, and PlGF levels will allow us to develop a test that can predict which patients will develop preeclampsia well before the onset of symptoms," he adds. "Third, we have a rationale for using these growth factors, or other approaches that would block excess sFlt1, to see if they might be useful in treating the disease."

between the pathology of Alzheimer's disease and age-related changes in the lens."

The researchers used immunologic assays and mass spectrometry to look for evidence of A-beta in lens tissue from nine autopsied Alzheimer's patients and eight controls. In specimens from both groups, they found the protein in concentrations similar to those found in aged brain tissue samples. They also found A-beta in samples of aqueous humor taken from three non-Alzheimer's patients who were having cataracts removed.

Most importantly, they found in Alzheimer's patients—but not controls—both cataracts and a distinctive pattern of cytoplasmic A-beta deposits in the outer, peripheral portion of the lenses. The lens does not clear protein deposits the way brain tissue does, and the researchers believe the protein deposits cause the cataracts.

"One of the most exciting aspects of this finding is the fact that these deposits are associated with a type of cataract seen rarely in the general population," known as equatorial supranuclear cataracts, says Leo Chylack, Jr. '64, HMS professor of ophthalmology at Brigham and Women's Hospital. "These cataracts do not block vision and can only be seen when the pupil is dilated widely, so they previously would not have been detected in Alzheimer's patients. If the association of these deposits with Alzheimer's holds up in future studies, it would be very simple to develop a noninvasive test of disease progression." Chylack and Ashley Bush, HMS associate professor of psychiatry at MGH, are co-senior authors of the *Lancet* report. An intensive project to develop such a test is under way. ■



One potential treatment is suggested by one of cigarette smoking's few benefits: a reduced incidence of preeclampsia that may be mediated by lowering sFlt1 and increasing VEGF production. This suggests that short-term nicotine treatment could be used for severe preeclampsia.

The work also has implications for anti-angiogenic cancer therapy, Sukhatme adds. Although patients on VEGF-signaling inhibitors must be watched for hypertension and proteinuria, "there may be a silver lining," he says, since these symptoms could serve as surrogate markers for the drugs' efficacy. ■

*Tom Reynolds is a writer in the HMS dean's office.*

CORRALLED BY INCREASING FINANCIAL CONSTRAINTS  
AND A LOSS OF AUTONOMY, SOME PHYSICIANS ARE MAKING  
UNBLINKING REASSESSMENTS OF THEIR CAREER CHOICES

# MAMMAS, DON'T LET YOUR BABIES GROW UP TO BE DOCTORS

*by* BEVERLY BALLARO

PHOTOGRAPHS BY CHRISTOPHER HARTING

» AUTONOMY OF DECISION MAKING—AND THE REQUISITE financial freedom to exercise it—have long been hallmarks of the medical profession in the United States. Perhaps no job outside of cowboy has better exemplified the spirit of rugged individualism valued in American culture. Certainly none has commanded as much prestige and respect in our society over generations.







And yet much has changed in the years since Waylon Jennings and Willie Nelson crooned their paeans to the notorious rootlessness of cowboys—and the comparative steadfastness of physicians: “Mamas, don’t let your babies grow up to be cowboys / Don’t let ’em pick guitars or drive them old trucks / Let ’em be doctors and lawyers and such.”

Were Waylon and Willie dispensing career counseling today, they might be inclined to revise, as a growing number of clinicians are already doing, their assessment of the advisability of pursuing a medical career. Physicians training and practicing in the contemporary marketplace operate in a world that bears scant resemblance to the one of professional autonomy enjoyed by physicians of earlier generations.

Young doctors today are entering a medical landscape substantially different from that of even a decade ago, according to the dean of Harvard Medical School, Joseph Martin. While the same spirit that inspired generations of physicians to pursue their profession may still motivate today’s aspiring and practicing clinicians, these clinicians must grapple with career limitations imposed, says Martin, by “managed care, uncertain salaries, and weakened hospitals and practice groups.”

Economic factors are clearly driving physician career decision making in unprecedented and

often—from the perspective of medical school deans, medical students, patients, and many practitioners themselves—unwelcome ways. And the pressures on physician decision making directly correlate with levels of physicians’ job satisfaction, according to a recent study published in the *Journal of the American Medical Association*.

Lead author Bruce Landon, assistant professor of health care policy and medicine at HMS, and his colleagues discovered that, more than income and finances, the degree of physician autonomy—specifically, the freedom to make clinical decisions in the best interests of patients, to spend enough time with patients, and to maintain continuing relationships with them—was the key factor in determining professional happiness.

“Physician career dissatisfaction most commonly stemmed from a perceived loss of autonomy,” says Landon. “Some physicians expressed frustration at what they viewed as an inability to practice as they wanted and had been trained to practice.” Yet Landon and his colleagues found that, with some key local market exceptions, the national level of physician career satisfaction has remained steady since the mid-1990s. This general level of professional contentment reflects, the researchers suspect, reforms in managed care plan practices that had tended to limit

# EVEN DOCTORS GET THE BLUES

~  
by NAKELA COOK

When I arrived at HMS, I quickly realized that I had significantly underestimated the cost of financing my medical education on my own. I found myself always just a little behind each month, forced to borrow from the upcoming month’s budget. I survived in that fashion for three years, but inevitably reached the point of depleted funds, growing credit card debt, and rent higher than I could afford. My money worries peaked at a time when medical school stress was also reaching its height.

I decided to take a year off and work in the hopes of decreasing my debt. Even so, during four years at HMS, I ended up borrowing \$150,000. Once principal and interest are repaid, the total cost of my medical education will be more than \$350,000.

In medical school, I had originally been interested in a career in primary care. I wanted to tackle such issues as death from

preventable or treatable illness, access to care among marginalized members of society, and differences in outcomes of diseases and treatments based on race, socioeconomic status, and gender. I struggled with how I would reconcile a career in the social aspects of medicine, traditionally accompanied by a lower salary, with my growing loan burden.

Based on a change in my clinical interests, I applied for a fellowship in cardiology. I realized that this specialty would provide me with the opportunity to pursue my research goals in health disparities within the field of cardiovascular outcomes and give me a salary that would allow me to repay my loans while maintaining a reasonable lifestyle.

But consider the many students, some of whom I personally tried to recruit to HMS, who often find themselves weighing a full scholarship at a state institution against siz-





able loon burdens to attend an institution like HMS. Many of these students ore fram under-represented graups. For those from less eco-nomically secure backgrounds, assuming o large finoncial obligation may nat be accept-able, while others connot fothom attending any medical schaal becouese of the huge cast.

As a result af student debt, we ore losing diversity at our tap medical schools, where leaders in the field ore educated and groomed, not to mention diversity in medi-cine os a whale. If diversity is crushed, our work in underserved communities is compro-mised ond our mission ta bridge the gops in health care becomes impossible.

*Nakelo Cook '00, a senior resident in primary care/internal medicine at Massachusetts General Hospital, will begin a cardiology fellowship in 2004.*

# YOUNG DOCTORS

from that of even a decade ago, according



clinical autonomy. Such restrictions had been put into place in the late 1980s and early 1990s to keep costs down but ultimately provoked a backlash on the part of patients and physicians alike.

Yet even as the overall measure of professional satisfaction in medicine has stabilized, an increasing number of physicians are speaking out about how the financial constraints imposed by the present health care system and the faltering economy are placing their autonomy in fresh jeopardy.

## What's an MD Really Worth?

The cold, hard facts of medical education today involve a great deal of cold, hard cash. The HMS admissions office estimates the current cost of one year of study at the School, including tuition and fees of \$32,708, to be in the neighborhood of \$47,750. Multiply that by four years and today's Harvard-trained physicians are looking at an educational investment that will require a fairly hefty return to make it worthwhile—at least from a purely dollars-and-cents perspective.

"If someone is looking for a career that is intellectually rewarding and in which a person can still make a reasonably good living, medicine continues to stack up pretty well," says Landon. "But the return on investment in medicine is no longer nearly as superior as it once was compared to other professions. I hear stories all the time now of young doctors practicing in the Boston area, for example, who cannot afford to buy homes. That used to be unheard of but is increasingly the case."

Medical school debt is also increasingly worrisome to HMS administrators who are already seeing the fallout in student career decision making. In conversation after conversation with recent graduates, Daniel Federman '53, senior dean for alumni relations and clinical teaching, has heard confirmation of the disturbing tendency for some students to shy away from personally rewarding and socially beneficial career choices in response to the burden of debt.

Dean Joseph Martin has characterized the enormous debts accumulated by many students as "a staggering load for someone about to indenture him- or herself to three to eight years of resident training" and has noted that the impact of debt is



today are entering a medical world substantially different to the dean of Harvard Medical School, Joseph Martin.

clearly making itself felt in students' choices of specialty career paths. Between 1998 and 2000, HMS graduates expecting to enter research fields declined from 15 to 9 percent, with increasing numbers—now nearly 10 percent—expecting not to practice medicine at all.

The HMS administration has been scrambling for new ways to alleviate the debt burden on students, given that currently only 6 percent of endowed funds are earmarked for scholarships. In 2002 Dean Martin announced the HMS Scholarship Campaign, whose goal is to raise \$35 million over three years to replace some loan money with increased grant support.

In the meantime, more and more HMS graduates are feeling the financial crunch. One alumnus, who prefers to remain anonymous—because, as he explains, “people don't like to hear doctors, especially surgeons, whine about finances”—is saddled with monthly loan payments of nearly \$2,000 for many years to come. He embarked on his career owing the School \$50,000 and the federal government an additional \$100,000, and is now having second thoughts about the wisdom of choosing his subspecialty, which is not known for especially high rates of compensation. He and his wife and would like to start a family but have put their plans to have children on indefinite hold, as they struggle to figure out a way to refinance his debt burden in a way that will allow them to maintain their modest lifestyle and, at the same time, plan responsibly for insurance, child care, college, and other family costs.

### A Distinct Liability

“Frankly, I don't know who's going to be delivering babies anymore,” worries Charles Welch, an instructor in psychiatry at HMS and past president of the Massachusetts Medical Society, referring to the impact of the skyrocketing cost of malpractice insurance on obstetricians. According to Welch, \$600 of the total cost of every baby delivered in Massachusetts today is earmarked for malpractice insurance. When the largest malpractice insurer in the commonwealth raises doctors' premiums 20 percent as it is scheduled to do this sum-

mer, the average Massachusetts obstetrician's insurance costs will jump from \$84,000 to more than \$100,000 annually.

Obstetrics isn't the only field hard hit, says Welch. The high cost of malpractice premiums is forcing some physicians to drop out of practicing other high-risk specialties such as neurosurgery, and the strong trend among medical students, he adds, is to pursue low-risk, high income specialties. And the problem isn't restricted to Massachusetts. Across the nation over the past year insurers have been hiking premiums as much as 20 percent, leading to a high profile surgeons' strike in West Virginia and a job action in Pennsylvania. The rate increases have also sparked an acrimonious political debate as to the root cause of the problem.

Regardless of its origins—whether it stems from egregious jury awards won by overly aggressive trial lawyers, as some factions contend, or from excessive billing of doctors by a malpractice insurance industry struggling to compensate for losses in tough economic times, as others argue—one fact everyone can agree upon is that more and more physicians are beginning to tailor career decisions on the basis of this new economic reality.

One such physician is James Wang, a Springfield, Massachusetts obstetrician-gynecologist who, after months of agonizing, stopped delivering babies. Wang made his decision when his original insurance provider, eager to get out of business in Massachusetts, terminated its contract with him early. Scrambling to find another carrier quickly, Wang was offered rates 100 to 115 percent higher than what he had been paying.

Making the decision to stop delivering babies was particularly wrenching for Wang, who was raised by two physician parents: “I used to accompany my mother and father on their rounds as old-fashioned country doctors. I grew up absorbing the idea of medicine as a wonderful, noble profession.” Wang never imagined, he says, that one day he'd be forced to give up part of his calling because of insurance costs. “My dream was to be able to deliver the babies of babies I had delivered,” he says, adding that he still hopes to find a way to serve that second generation but isn't sure if it will be possible.

# “FRANKLY, I don’t know who’s going an instructor in psychiatry at HMS and past

“Rising malpractice costs,” Wang says, “are just the tip of the iceberg. Most people think in the realm of dollars and cents but they forget that physicians are human beings with lives, families, responsibilities, needs, and wants. The level of stress on a daily basis in obstetrics is incredible. Yes, I chose this field, but in return for the long hours, missed family time, and tremendous job pressures, I hope to be able to make a reasonably good living. But there are so many impediments today. The malpractice crisis is the last straw for many physicians. I love what I do but, if I knew starting out in medicine what I know now, I’m not sure I would have chosen this path.”

For Wang, all options are on the table, including the possibility of relocating out of state. He is not alone. A recent survey of 7,565 Massachusetts physicians and other health care field professionals conducted by the Massachusetts Medical Society shows that, for the second consecutive year, a serious shortage of physicians in key specialties is creating a recruiting crunch for hospitals. The results indicate that overall, 28 percent of doctors surveyed are considering a career change, with 40 percent in obstetrics and 56 percent in neurosurgery mulling new paths.

“Obstetrics is such a wonderful field with so many rewards,” Wang says, “but I would have to tell medical students considering the field today that, unfortunately, you can’t follow your heart alone. It’s wonderful if you love what you do, but if you can’t make a living at it, how are you going to manage?”

## You Get What You Pay For

Last year, when Harold Solomon, associate clinical professor of medicine at HMS, decided after 33 years of practicing medicine to join a concierge medical organization, he heard mostly criticism from his colleagues in academic centers. But, according to Solomon, the concierge medicine concept does not deserve much of the controversy swirling around it, given the degree to which the notion of paying a premium price for premium service is inculcated into American culture.

“One-size-fits-all would be terrific for medicine,” Solomon says, “if reimbursements had not shrunk, or if costs for unnecessary documentation

and malpractice premiums had shrunk in proportion to reimbursements.”

A concierge practice has allowed Solomon the freedom to practice in a way that had become impossible over time with the escalating financial pressures of modern medicine. “I was forced to look hard at the numbers,” he says. “The average internist in the United States earns perhaps \$120,000 per year. My overhead was \$200,000, including office staff, billing costs, insurance, utilities, mailing costs, and depreciation. The average reimbursement per visit was \$70. If I had only 2,700 patient visits per year, I would lose \$11,000 annually. I did not start paying myself until after the first 2,700 visits. At 4,000 visits, I generated \$280,000, earning \$80,000. Four thousand visits take 2,000 hours, which is 40 hours per week, 50 weeks per year. And then there are letters to write, phone calls to return, hospital visits to make, and an office to run. I also try to teach, attend conferences, and read the medical literature.

“I was taught to schedule routine visits every 30 minutes,” Solomon adds, “which I continued to do up through the last year of my previous job.” But when the economic disadvantages of his traditional way of doing things became overwhelming, he tried to modernize. He stopped admitting patients, relying on a hospitalist instead. He shortened his visit intervals in an attempt to increase his productivity. But doing so, he found, also shortened his temper and led to missed phone calls and delayed visits. “I realized,” Solomon says, “that the quality of my work was my driving force. It’s more important to me to have satisfied patients than to be ‘productive’ and ‘efficient.’”

So in 2002 Solomon closed his practice, which had served 1,250 patients, and offered them the possibility of following him, for an annual fee of \$1,500, to a new concierge practice he had joined. He granted “scholarships” to many patients to whom he had provided unique care or with whom he had strong, long-standing attachments. In addition to the annual fee, of which he receives a portion, Solomon bills patients fee-for-service in the usual manner. The patients, he says, are assured access and quality of care, with a special emphasis on prevention.

One could argue the fairness of this approach to delivering care, Solomon admits, but he is con-



to be delivering babies anymore,” worries Charles Welch, president of the Massachusetts Medical Society.

vinced that, given the opportunity to seek out and pay more for services, many patients will decide that it serves their best interests to do so. Under the current system, he says, society's leaders cannot decide whether health care is a commodity or a service, a right or a privilege.

To address this dilemma, Solomon has a proposal: “Define incentives for quality work that both patients and doctors understand. Nationalize the health care system. Give everyone a Medicare card. Let the political process determine the floor, but allow the markets to determine the ceiling. Let physicians and hospitals charge premiums for premium service. Deregulate copayments altogether.”

By building a floor for everyone but allowing the ceiling to float, Solomon argues, “we will all get some care, and those who want and can afford more will have the right to purchase as much as they want. Employers could offer more benefits as an inducement for employment.” And, he adds pointedly, “Doctors will choose careers knowing that they can earn a living and take pride in their work.”

Solomon now sees half the number of patients he saw during his last year at his previous job. “I make home visits,” he says. “I’m on time again and I return calls promptly. I never turn off my beeper, unless I’m abroad. I take my own calls. My computer-based office and hospital patients’ records are always available. Although there has been a nationwide hue and cry about this style of medicine, both my morale and the quality of my practice have soared.”

### Rules Rush In

Although members of the physician community at HMS, as in the nation at large, have responded to the economics of today’s medicine with a range of career decisions, they are nearly unanimous in the opinion that the present system is, in the long view, untenable. The enormous challenge of transforming the economic context in which medicine is practiced in this country is going to require, most seem to agree, an unprecedented combination of strong leadership and political will.

Nothing short of a full-scale reinvention of the health care system—“the only major American

industry not to have modernized in our lifetime”—is in order, says Charles Welch, given what he sees as the incredibly wasteful inefficiencies that both harm the interests of patients and constrain professional decisions for doctors. “Administrative overhead currently soaks up 40 cents of every health care dollar,” Welch laments. “We have created a system that requires an army of administrative specialists in the operations of both insurers and providers. Most of this activity adds nothing to the quality or effectiveness of care, and it drains hundreds of billions of dollars away from urgent clinical needs.”

Compounding the problem, Welch adds, are “antiquated systems of information and care delivery; our infatuation with wildly expensive new drugs and devices, many of which are no better than old approaches that are a fraction of the cost; the use of lawsuits to compensate injured patients; and a gross underfunding of health care in general.”

For Bruce Landon, who has focused part of his own career on measuring the degree of satisfaction that physicians enjoy with their career choices, the broad picture of a fairly contented profession can be misleading. “Our study provided just one snapshot glimpse at a complex and evolving situation,” says Landon. “While it may be true that overall levels of physician dissatisfaction do not seem to have increased dramatically, it’s important to take stock of the local variations. It’s also crucial to keep tracking the cumulative effects over years. A lot of little events, which may seem like mere ripples when examined in isolation, can add up to a serious trend over time.”

For the administrators at HMS and other medical schools around the country, the question remains, as Bruce Landon frames it: “Are we attracting and will we continue to attract the best people to medicine? When bright young people have to choose between medicine and, say, law, will they pick medicine, given the educational debt burdens and hassles physicians face?” A nation whose well-being lies in the hands of the next generation of physicians can only hope for the kinds of reforms that provide an affirmative answer. ■

*Beverly Ballaro is associate editor of the Harvard Medical Alumni Bulletin.*



PHYSICIANS AND ECONOMISTS SHARE PERSPECTIVES  
ON HOW TO CURE WHAT AILS THE CURRENT HEALTH CARE  
SYSTEM IN THE FACE OF ONGOING FISCAL CONSTRAINTS

# A FISTFUL OF DOLLARS

» FEW ISSUES HAVE PROVEN AS DIVISIVE AND SEEMINGLY IMPERVIOUS TO rational solution in American political life as the ongoing crisis in health care financing. Millions of Americans are uninsured, and health care costs continue to escalate. The *Bulletin* asked several physicians and economists for their perspectives on the current state of health care in the United States. Included in the discussion were David Blumenthal '74, director of both the Institute for Health Policy at Massachusetts General Hospital and the Harvard University Interfaculty Program on Health Systems Improvement, who also served as moderator; Stuart Altman, PhD, Sol C. Chaikin Professor of National Health Policy at The Heller School for Social Policy and Management at Brandeis University; Joseph Newhouse, PhD, director of the Harvard Division of Health Policy Research and Education; and Charles Welch, MD, past president of the Massachusetts Medical Society. Excerpts from their discussion follow.

PHOTOGRAPH BY CHRISTOPHER HARTING

DAVID BLUMENTHAL: If you could wave a wand and arrange for universal coverage, what would you put in place?

STUART ALTMAN: While polls show that about 85 percent of Americans support providing health insurance for everyone, proposed solutions always break down over who's going to pay—and who's going to run the new system. My preference would be to build on our current system. I would lower the eligibility age for Medicare and allow certain individuals—those who retire early or, for a variety of reasons, aren't working—to buy into it. And I would expand Medicaid to cover people just above the poverty line.





**JOSEPH NEWHOUSE:** Achieving universal coverage would require a considerable element of compulsion. The uninsured will not voluntarily insure themselves unless they are heavily subsidized to do so. This will require taxing the population; telling people, just as we inform car owners, that everyone must be insured; or ordering employers to provide some kind of insurance.

**ALTMAN:** I agree that there is simply no way to reach anything resembling universal coverage without a mandatory system. And it's going to require a much higher level of subsidy than that proposed by the current administration. You're not going to accomplish universal

coverage by handing low-income people \$3,000 and telling them, "Here—go buy insurance." People with annual incomes between \$15,000 and \$30,000 are not going to purchase insurance that costs \$10,000 to \$12,000 per family.

**CHARLES WELCH:** I'm curious as to what you think about a system in which federal taxation policies would provide people with incentives to purchase insurance individually.

**NEWHOUSE:** Employer-provided insurance has two major advantages: it is substantially cheaper because you don't market as much to individuals, and, in general, employment groups are not

formed for the purpose of getting health insurance. So, to a large degree, one avoids problems of adverse selection and the death spirals that can occur in individual insurance. I think that one of the reasons for the enactment of Medicare was that the individual insurance market didn't work well for the elderly.

**WELCH:** The idea of taking the employer out of the business of providing insurance for employees and empowering all Americans, through refundable tax credits, to purchase insurance directly is a conservative favorite.

**ALTMAN:** But for it to work over a long period of time, the government would

# WHILE it's true that, in the short run, fee-for-service system, I find it hard to believe that

have to be willing to continue to upgrade those tax credits to accommodate what has been—for the past 50 years at least—a continuous growth rate of health care spending, because patients want more and better. And physicians want to provide the best care possible.

I'm concerned that those tax credits would not keep pace with health care costs. At some point, consumers would likely demand that the government regulate the system, which would mean major restructuring and cuts, primarily in fees paid to hospitals and doctors. I suspect what may sound liberating for physicians would be only temporarily so.

WELCH: Despite its risks, I think that the principal attraction of such a plan is that it would bring an infusion of cash into the system from the federal government that would move us closer to achieving universal coverage.

ALTMAN: To accomplish this goal, you have three choices: You could go through individuals, thus breaking down the employer-based system; you could have the government run the whole system; or you could have the government heavily subsidize individuals through either Medicare or Medicaid while providing support to small businesses to help them defray the cost of covering their employees. All of these options would require a substantial infusion of money from the government.

But if we don't do anything, what will happen is that insurance companies will develop big deductibles and co-insurance. The thing that physicians fear the most will happen—patients will be coming to them with no coverage. And physicians will return to the days of accepting chickens and pies as alternative forms of payment. It's not good for physicians, and it's definitely not good for patients.

BLUMENTHAL: What are your thoughts on a single-payer system, as opposed to a tax-credit approach and employment-based approach?

NEWHOUSE: Part of the problem with the idea of a single-payer system is that it defines a slogan better than it does a policy. To me, the simplest way to achieve a single-payer system in this country would be to pronounce everyone eligible for Medicare, which does have a functioning payment system and does approximate a single payer for the elderly. But Medicare looks very different from what many advocates of the single-payer system have in mind, which is something that resembles the Canadian system.

ALTMAN: Every other industrialized country has universal coverage, but many people don't realize that no two of those systems look alike. Canada does not have a national system, but a provincial one. The federal government subsidizes the care that the provinces deliver by issuing block grants. Each province provides a basic set of services, similar to the way we do in Medicaid, but they are also free to provide more services if they can afford to do so.

In Great Britain, tax revenues go to the central government, which creates a delivery system in which physicians may nominally be private, but are controlled by income from the government.

A third model is Germany, in which all individuals are required to have health insurance and all employers are obliged to provide it. Individuals can obtain insurance through their employer, their union, the town they grew up in, or a variety of places. The premiums are shared 50/50, not 80/20 like we talk about here.

The German Medical Society is given a fixed pool of money each year. The soci-

ety fights with a cabal of insurance companies to decide how big that pool will be. But once the pool is established, it becomes the responsibility of the society to allocate that money to the physicians.

NEWHOUSE: Most, if not all, of these universal coverage systems are not really single-payer systems. Most European countries have escape valves for the wealthy; in some countries, high earners are exempted from the compulsory plan. In the UK, people in the upper income brackets can—and frequently do—buy insurance that allows them to jump the queues for elective surgery. No major country that I am aware of has a strictly single-payer, government-run plan.

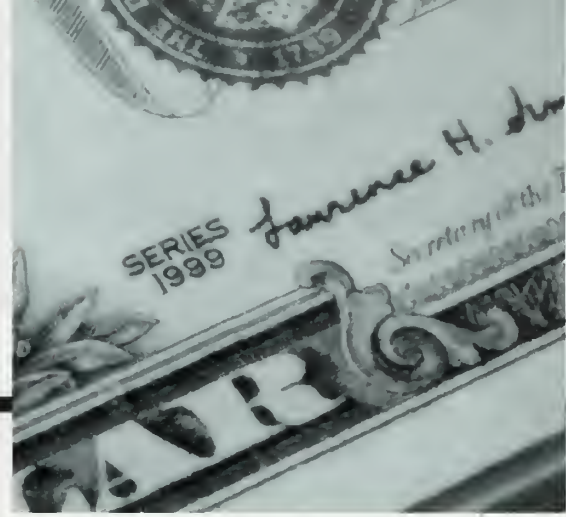
BLUMENTHAL: But, in both Britain and Canada, everyone has insurance paid for by tax revenues.

ALTMAN: Most people who talk about universal coverage in the United States are envisioning a plan that is substantially better than Medicare. Actually, this is a real problem with discussing national health insurance, because whenever you propose mandating a particular plan, all groups related to health care immediately lobby hard to make sure that their services are included.

What started out as, if you will, a physician insurance system—if a physician didn't perform a service or wasn't part of it, you wouldn't get reimbursed—is now something different. Legitimate arguments are being made by psychiatric social workers, speech therapists, and other professionals who, for many people, are as important as physicians. But what happens is that they add more and more layers, so we wind up with a system that's much more expensive and expansive than Medicare. Yet there's no question that the current system is dangerous for all



physicians are much freer under a we'll be able to sustain it for a decade.



sides—for consumers, providers, and the government—and that it is burdening everyone with serious cost problems.

While it's true that, in the short run, physicians are much freer under a fee-for-service system, I find it hard to believe that we'll be able to sustain it for a decade. If physicians want to regain control of their destiny, they'll need a reimbursement system that moves away from fee for service. The capitation system that was created in the mid-1990s was too restrictive. The managed care companies squeezed it too much and made it intolerable. But I believe that a properly designed capitation system is actually better for physicians.

I think that if you put physicians in charge of both fees and utilization—as opposed to putting some third party in charge—you will wind up either with a reintroduction of insurance companies running the system or the government taking it over. I fear that the current system essentially puts no one in charge.

**WELCH:** Health care in the United States, at this time, is unmanaged and, because of that, we have the least efficient system in the world. We won't be able to accomplish anything until we address intrinsic inefficiencies: first, administrative overhead, which soaks up an incredible percentage of the premium dollar just for transactional costs; second, all those antiquated ways of taking care of people, including paper records and reimbursement on a per-visit basis; and third, our lack of a rational system for selecting and deploying new technologies based on cost effectiveness.

**BLUMENTHAL:** A new generation of economists is raising an alternative hypothesis. They're saying that health care is worth what we're paying for it. Sure, it's expensive and uncontrolled. But it's the best investment this country could make.

**NEWHOUSE:** Or any country, for that matter. Every nation is buying into the capabilities of medicine. It's not the case that, if you go to Germany, the UK, or Canada, there are no MRI machines. There are just fewer of them. There is less of everything, in general, which is why they spend less than we do. But they are buying the new capabilities as they come out.

There is plenty of evidence that we could reduce costs without giving up much. The problem is figuring out how we're going to reduce them and who is not going to get their spending. It's also not true that we don't ration care. We just do it implicitly: the uninsured and Medicare beneficiaries get less care than other people do for similar problems.

**ALTMAN:** Yes, we ration in that some people aren't insured. We also ration according to geography; people who live in cities with big medical centers have greater access than those in rural areas.

But, for the most part, this country does have much better access to the new technologies than any other nation. I have a good friend who lives in Canada, a man with a heart condition for which he would probably undergo open-heart surgery fairly quickly in the United States. But in Canada he'll probably stay on a waiting list for six months to a year. The consensus is that, although his condition has greatly restricted his mobility, it's not life threatening.

The Canadians have limited the number of places where this kind of operation takes place. And England has many instances of people needing chemotherapy or suffering from renal disease who are on treatment waiting lists.

When you ask people in this country whether they'd be willing to put up with that kind of rationing in return for the greater good, they don't like it. Americans

want the benefits of the new technologies, and they don't want to see the medical care system held back. But that's different than saying that it should be totally unregulated, because they're also telling us that they're having difficulty affording the growth.

If the price we pay for universal coverage is a limited amount of rationing that slowed the growth rate but didn't stop it, I think Americans would get used to it.

**BLUMENTHAL:** The argument I hear being made is that limiting health care might be bad for us as a society because people are buying it for good reason. It's a better investment to buy a stent for your coronary artery than another car or computer, because it increases your productivity, improves the quality of your life, and even extends your life. It's an argument that physicians have been making for a long time. So, I think the real question is not so much the rate of growth, which may be justifiable, but the level of inefficiency. Now that, of course, gets us into tough terrain about how to determine what's misuse of beneficial care.

**ALTMAN:** What would happen if we were to slow our system down a bit and have fewer options? Now, no one would suggest we should not be doing extensive amounts of open-heart surgery or that we shouldn't use stents. The question is: once we make these things available, do they need to be everywhere?

The other issue is whether we should be doing open-heart surgery on 95-year-olds, or even 90-year-olds. Other countries don't do that. They're allocating resources while we're making tradeoffs without really having much control over those tradeoffs. In countries where all the money flows through a single spigot—the govern-

# THIRTY percent of physicians we by retiring early, shifting to administration,

ment—society is saying, in effect, we'd rather spend our money in other sectors.

**BLUMENTHAL:** Maybe we could achieve consensus on ways to make it possible for people who deliver care to have more freedom to make the right choices. Capitation was introduced in the context of overspending but it failed because it was used as a club to reduce costs rather than as an incentive to improve quality, physician autonomy, and patient choice.

**NEWHOUSE:** I agree with the Institute of Medicine's view that it's impossible to make headway without achieving greater organization than we have today. And I think this is where the medical profession can really exert leadership.

**WELCH:** For the past few months, the Massachusetts Medical Society has been looking into issues of unnecessary administrative overhead. For instance, at Massachusetts General Hospital, for every four physicians, we need one billing specialist and two referrals and authorization specialists. So insurers and providers together are trying to identify elements of administrative overhead that both sides can agree are unnecessary. The surprise to everyone is how much agreement there is.

The aim is to move this initiative forward from saving money on administrative costs to developing a statewide, fully integrated electronic platform for health care, creating systems of coordination and integration of care across inpatient and outpatient interfaces. So, it's the right care, at the right time, and in the right place, using predictive modeling to identify high-risk patients and to intervene earlier in the trajectory of their illness.

We also need to establish consensus on targets of quality and safety. Because right now, we've got a Tower of Babel. Every insurer has different guidelines,

and there's no way physicians can keep it straight as to who wants them to do what for how much money.

And finally, we need to create incentives for health, not for the visit. We blew capitation the first time around not because capitation was bad, but because we did it in a way that put physicians in an impossible situation. We need to provide them with incentives to innovate and to deliver a better level of care at a lower cost.

**BLUMENTHAL:** We've gone through a period in which integration was the mantra for saving money. There were many mergers and acquisitions, legal bills were run up, and many backroom functions were consolidated. But it seemed neither to reduce costs nor to change practices. So people have a bad taste in their mouth, right now, about integration.

**ALTMAN:** I agree. Just as we learned the wrong lesson about capitation, we learned the wrong lesson about integration. Integrated systems would have worked better if reimbursement practices hadn't changed such that those systems were hemorrhaging money. They were buying physician practices, which turned out to be very expensive. They bought nursing homes and homecare agencies which, when reimbursements changed in the federal government in 1997, also became losers.

Let's face it, truly integrating and getting people to work together is a long-term process, and it probably would have taken a generation to make it succeed. So we now have many more divorces than marriages. And the ones that are still married often live in separate houses. Information technology allows that, because it doesn't require you to be in the same building or even the same city, as long as you're willing to work together. So, maybe

we'll find an alternative model. But I think we've lost a valuable organizational structure as a result of this disintegration.

**BLUMENTHAL:** Many of the 20,000 physicians in Massachusetts are in individual practice and would probably be unhappy at the prospect of a future of integration. They want to be free to choose.

**WELCH:** If integration worked any better than what they have now, they would leap at it. There is a huge amount of dissatisfaction out there among physicians. We're having a workforce implosion. The vacancy rate in cardiology in Massachusetts is 17 percent, for example. More than half of the hospital departments we surveyed this year are curtailing services because of physician shortages.

One in three physicians in Massachusetts tells us that, if things don't get better, they will leave the state. Thirty percent of physicians we surveyed are trying to leave the practice of medicine by retiring early, shifting to administration, or changing professions altogether. So, there's a rush for the door. On the face of it, it looks like it's the ratio of income to cost of living that's the main driver for this unhappiness. But underneath that is despair over all the impediments to providing good care.

**BLUMENTHAL:** With the Center for Health System Change in Washington, DC, Bruce Landon and I recently did some research on physician satisfaction that showed that, nationally, the most important determinant of satisfaction is not income, but autonomy—the freedom to make decisions and the opportunity to deliver the best quality care.

**ALTMAN:** I do think we need to acknowledge that the situation has been improving. I understand the cost of living problem in Massachusetts, and I understand



# surveyed are trying to leave medicine or changing professions altogether.

the impact of skyrocketing malpractice insurance rates. But the managed care companies that continue to function want to be kinder and gentler. The strong pressure from managed care to regulate the behavior of physicians is way down. In terms of autonomy, physicians today are better off than they were five years ago.

**WELCH:** Yes, but it's an illusory freedom, because the system itself is so difficult in terms of being able to take good care of people. I think physicians are walking out of the profession, to some extent, simply because they feel like they can't do the job they have always wanted to do, because the system has become so antiquated, so paper-bound, so inefficient and fragmented.

**NEWHOUSE:** Whatever changes will be made, they can't be one-size-fits-all solutions, because what works for a major Boston teaching hospital won't work for a small-town practice in the western part of the state. And that's just the diversity of Massachusetts, never mind the country at large.

I like elements of capitation, but it has some substantial drawbacks. Since we don't know how to perfectly tailor capitation to the individual, there are incentives to cream the good risk and dump the bad. And in a capitated system, you don't get paid anything for doing more. So I would advocate a mixture of capitation and fee for service. Capitating individual physicians for all services would terrify me, whereas capitating a large group is another matter.

**ALTMAN:** We need to bring physicians back into the decision making process, but without an open-ended budget.

**BLUMENTHAL:** In the 1990s, there was an attempt to redesign the health care sys-

tem without involving physicians on the assumption that they were part of the problem, that their spending, test ordering, and habits were counterproductive. And capitation was seen as a solution.

The public taught us that they didn't like that. When the movie *As Good As It Gets* came out in 1997, whenever Helen Hunt's character referred to "that damn HMO," the audience would break out in applause—and, as far as I can tell, even in Boston, the audience members weren't all doctors! There was a genuine popular rebellion against the idea that doctors were not in control of their patients' care.

So physicians should feel good about the alliances they have created with patients. But they also need to realize that they're not the only ones under stress; patients are under increasing stress as well, as they face escalating costs. The question that physicians have to answer is how to organize themselves, because they're not easy to organize, constitutionally.

**ALTMAN:** If the system continues unregulated, no amount of goodwill on anyone's part will stop the escalating costs, because every sector of the system will operate in its own self-interest. Patients want the best; physicians want to provide the best.

Other countries limit the availability of resources by restraining the supply side. They say, "Doctor, you're free to do anything you want. But there are only two open heart units. If you send ten patients, someone will have to create a priority list." That's how they limit spending.

**WELCH:** If we were to come back to this table in the spring of 2008, how optimistic are you that things would be better?

**NEWHOUSE:** The capabilities of medicine will definitely improve. Costs will be higher. Probably the number of unin-

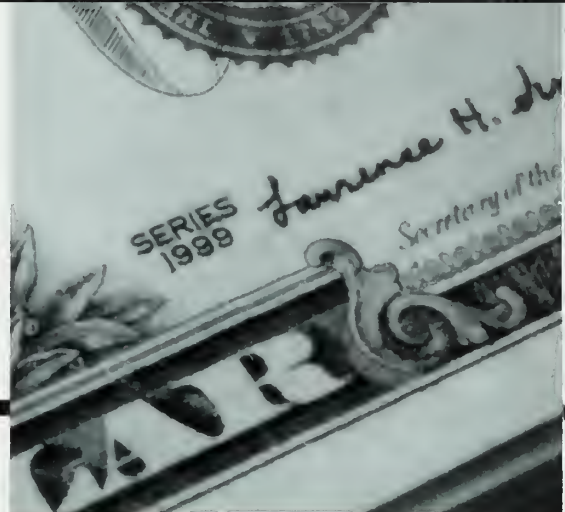
sured will be marginally greater, unless the economy picks up a lot faster than I think it will between now and 2008. Much will depend on how the overall economy performs.

**ALTMAN:** I think we will be significantly worse off by 2008. The number of uninsured will be significantly higher, and the Medicaid program will likely be in much worse shape. Even if the economy turns around, it still won't be easy to buy back what we've lost. We need an active, serious intervention by the government, not to take the health care system over, but to be a force for good.

**BLUMENTHAL:** I agree—things will be worse by 2008. But I think, by 2015 to 2020, we will have a significantly revised and improved health care system. I'm assuming that these conditions will get bad enough over the next ten years for that to happen.

**WELCH:** I think the same thing will happen, but faster, because the cost escalation is crushing the system. And the dysfunctions in the system are destroying both patients and physicians. So I hope this evolution will be much more rapid than you predict, David.

**BLUMENTHAL:** We should keep in mind another evolution that will happen at the same time: the ability of physicians to make a difference in the lives of patients will grow rapidly, maybe even exponentially, over the next five years. Both the life expectancy and health status of Americans will continue to improve. And if you can isolate yourself from the chaos of health care financing, the rewards of being in medicine will be substantially greater than they've ever been in history. ■





AN INTERNIST FINDS HER IDEALISTIC VISION OF THE HEALING

# THE DOCTOR'S LAMENT

by VIRGINIA LATHAM

» I FIND THAT I AM DREAMING AGAIN, THE SAME DREAM THAT I USED TO have some 30 years ago, before medical school: I arrive at my office in a pleasant suburban building with plenty of free parking, stride through the waiting room greeting smiling patients by name, put on my white coat, and begin a day of bringing comfort to the suffering, hope to the despairing, and kindness and respect to all. Then I wake up. ¶ What has happened to my dream? What has become of the 36-year-old housewife and mother who began her medical student days as “the oldest

person Harvard had ever accepted,” with the goal of caring for each patient as though he or she were the most important person on earth? What has happened to the aspiration of providing selfless service until the point of dying suddenly at work, like the giants of medical mythology?

Medicine has changed. The world of those dreams may never have fully existed in any era, but today's health care bears little resemblance to the practice of medicine—and the

experiences of patients—in the 1970s. Thirty years ago, physicians were called doctors, not providers. “Health” and “care” were still two separate words. “Health care crisis” referred to illness, not economics.

After graduating from HMS and training in internal medicine, I set out to live my dream. I briefly considered going on to a subspecialty, as HMS graduates were expected to do. Yet I had wanted since childhood to practice medicine in a community setting where I could



## PART OF MEDICINE CUT SHORT BY HARD ECONOMIC REALITIES



**UNMANAGED CARE:** Burdened by financial pressures, Latham was forced to pack up her practice at Emerson Hospital.

treat men and women, old and young, the very ill and the nervous healthy, and where I could truly get to know my patients. Besides, with five teenage sons and an astronomer husband, all of whom had made enormous sacrifices to see me through medical school and residency, it was time to start a practice.

PHOTOGRAPH BY JEFFREY M. HARRIS

I was invited to join a wonderful, kind, and modest internist in Concord, Massachusetts, who practiced excellent medicine in exactly the way I had envisioned. It is hard now to believe that we functioned as we did less than 20 years ago. We paid little attention to the business of medicine: we accepted as payment fresh vegetables and homemade pizzas from patients who were short on cash. We spent the time to get to know our patients and to understand their physical diseases in the context of their social and psychological lives. The waiting list to join our practice grew.

We decided to take on a few more patients, but then had to hire an extra secretary to keep up with the phone calls. Once we had a larger staff, we agreed to accept yet more patients. Soon a business manager seemed necessary. We found ourselves working longer and longer hours, sleeping less and less, and becoming increasingly unavailable to our families. Through all this, still more people wanted to become our patients. But a growing number of them were becoming members of HMOs through their employers, and an ever-dwindling number of the uninsured could afford to pay. Our margins slid.

Neither my partner nor I had received any training in the business of medicine during medical school or residency, and little information was available in print or in post-

# TODAY'S medical system tends patients and to encourage quick procedures



**LAST CALL:** Latham says goodbye to two long-time patients on their—and her—final appointment at Emerson Hospital.

graduate seminars. Nor did we ever find the time to sit down with accountants or consultants to address how we might better manage the finances of being in practice; we were far too busy taking care of patients.

Reimbursements from the insurance companies continued to shrink, and the burden of filling out forms and telling patients “no” when they requested this test or that medication fell to us. We spent increasingly more time on triplicate forms and duplicative paperwork that did little or nothing to enhance patient care. Overhead costs rose, and rose again. Year after year our incomes fell, even as we put in longer hours. At one point, standing in a pizza shop, I saw an advertisement on the wall for

a new manager and realized that the position offered more per hour than I was making.

My partner and I both loved what we were doing, and our spouses and children stuck by us. Only gradually did we realize that neither of us could continue to practice quality medicine when we were rushing through our patients, ending the day too exhausted to drive home safely, and sacrificing opportunities to see our families.

During that period, I was unexpectedly recruited to become chief of ambulatory medicine at West Roxbury Veterans Administration Hospital. While I would be seeing some patients in my own clinic, I would spend most of my time teaching students, interns, and residents from various Harvard programs and overseeing all of the primary care and specialty clinics. I jumped at the chance. But packing up my medical equipment, my pictures, and my entire work life was hard. And saying goodbye to my patients, my mentor, my hospital, and my community felt awful.

Although the VA position was wonderful in many ways, over the years I found myself increasingly busy with administrative detail and decreasingly available to my patients and students. Eventually, I was offered a major promotion that would have meant giving up patient care entirely.

Instead, in 1992, I returned to private practice. The then chief executive officer of Emerson Hospital in Concord had offered me the opportunity to join a planned group of salaried primary care physicians directly affiliated with the hospital. In the early 1990s such groups were being touted nationally as a win-win solution for hospitals and for primary care physicians. I eagerly returned to the community.

The patients flocked to our practices, which were always oversubscribed. The hospital-based groups grew rapidly—some 30 physicians joined Emerson Practice Associates; my personal group consisted of five internists. Meanwhile, I had arranged for the hospital to become a site for the HMS primary care clerkship, so I could continue to teach—and offer other physicians the opportunity to teach—the outpatient medicine that I loved.

But reimbursement continued to be set by outside parties: Medicare, Medicaid, and the health



# to penalize physicians for spending time with and testing over listening to and examining the sick.

insurance companies, with little or no physician input into the rates. Expenses escalated: malpractice insurance, rent, telephones, utilities, staff salaries and benefits, supplies, medications. The combination of fixed reimbursement and escalating overhead costs led to negative balance sheets for the hospital. We physicians came to realize that hospital management consultants were often even less well equipped than we were to understand and effectively control office expenses. Instead the mandate was always to see more patients faster, to increase income. Unfortunately, that mandate not only didn't improve finances if the per patient reimbursement was less than the cost of delivering the service, but it also often meant sacrificing the quality of the care being delivered.

Emerson Hospital, like hospitals across the nation, viewed affiliated practices as potential profit centers, not cost centers, even though such practices provided the institution with many patients who previously had used physicians elsewhere and now, by using the hospital's outpatient and inpatient services, contributed to its bottom line. And direct profits from office practices were not to be. The financial realities of maintaining an office practice in Massachusetts with its high penetration of managed care and associated low reimbursement rates, combined with the state's high cost of doing business, led Emerson Hospital, like many hospitals, to divest itself of affiliated practices by the year 2000.

These days I continue to enthusiastically greet my former patients when I see them. Sadly that's not in my waiting room, but only in the grocery store, at church, or in the town library. Instead of caring for individual patients, I spend my days working on initiatives related to patient safety and improving the quality of medical care. While those are important issues that ultimately benefit larger groups of patients, I now function as the physician of my dreams *only* in my dreams.

Over the past decade, while in active practice and since, I have spent a great deal of time working to try to improve the health care system for both physicians and patients. Today's medical system tends to penalize physicians for spending time with patients and to encourage quick procedures

and testing over listening to and examining the sick. Enormous amounts of money are spent on administrative regulations and programs to control costs, while medical care itself is underfunded. We are in an era in which we can save the lives of the formerly hopelessly sick and deliver incredibly complex care thanks to awe-inspiring technical advances, yet many working people lack the resources to take a febrile child with a sore throat for care before the strep pharyngitis becomes rheumatic fever.

We can ill afford to look at the current state of the health care system and simply shrug, declare the practice of medicine hopeless, and retire early. And we can ill afford to ignore the changing goals of young physicians. Many of them now seek law or business degrees or look for corporate positions, while the number of those choosing careers in medical education, basic research, or patient care decreases.

Whether our personal skills as physicians are in compassionate listening, meticulous microsurgery, or innovative biotechnology, we must lead the state and national debate on reform of the health care system. Many of us frequently feel too overwhelmed by our day-to-day responsibilities to take on anything else. But we cannot ignore the larger issues. We are the ones who best understand medicine and who can best advocate for our patients and our profession.

As physicians, no matter what our specialty, age, or politics, we must work together to revamp the system. We need creative reforms that move us into the future and encourage new ideas. We need change that allows us to continue to put the highest priority on delivering the best care that we can to each human being who comes to us. While we sleep, we can dream of an idealized past that may or may not have ever existed. But while we are awake, we must dream of the possibilities of the future and take action to realize those dreams. ■

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*Virginia Latham '81 is a past president of the Massachusetts Medical Society, the Emerson Hospital medical staff, and the Massachusetts branch of the American Women's Medical Association, and a current delegate to the American Medical Association, roles in which she has emphasized patient and physician advocacy.*



A SMALL BUT GROWING NUMBER OF GRADUATES ARE EXPLORING NEW

# SIX DEGREES OF INNOVATION

by SUSAN CASSIDY



## « James Cashel

WHEN JAMES CASHEL '89 CHOSE TO COMBINE his medical training with a master's degree in public policy through a joint program between HMS and Harvard's Kennedy School of Government, the combination struck some as an unlikely, if not incompatible, career recipe. But Cashel, a student of history, points out that he was in good company: "Three of our nation's Founding Fathers were not only prominent in government, but they were also physicians."

Capitalizing on a similar spirit of versatility, Cashel has blended medical knowledge with political know-how to chart a course not readily conceivable to many physicians. "I've spoken to doctors who find it difficult to conceptualize anything outside of academic medicine," he says. "When I graduated, I could count on one hand the number of alumni who weren't going directly into residency."



## FRONTIERS ALONG THE BORDER BETWEEN MEDICINE AND BUSINESS

But that trend is changing, in part because of innovative models of career crossover such as Cashel's. After receiving his joint degree, Cashel went to Washington, DC, where he co-founded the Eurasia Foundation, which funds programs that build democratic and free market institutions in the New Independent States of the former Soviet Union. The foundation quickly grew from three staff members to more than 100 in seven countries, with an annual budget of more than \$25 million.

Ready to move on to new challenges, Cashel became excited by the potential impact of the Web on medicine and public policy issues. In 1996 he founded Forum One Communications to take advantage of that promise. As chairman, Cashel collaborates with agencies that are working to solve pressing problems in such areas as the environment, international development, and medicine, guiding them to use the Internet to fulfill their missions and achieve a broader international reach. He co-directs the International AIDS Economics Network website, for example, which links more than 7,000 HIV/AIDS policymakers worldwide.

Cashel's medical background played a key role in this success. "A medical degree offers training in the natural sciences, provides extensive exposure to the social sciences, and teaches critical thinking and the management of large amounts of information," he says.

"I'm working increasingly at the intersection of medicine, technology, and public policy," Cashel adds. "And when I speak to physicians now, I often hear envy in their voices as they talk about the possibility of working in an environment that's not strictly medicine, to get away from some of the current constraints of the profession." ■



### ≡ Anula Jayasuriya

WHILE A STUDENT AT HMS, ANULA JAYASURIYA '84 ONCE STOLE A RARE MOMENT of leisure to read the *Wall Street Journal*. As she scanned the headlines, she became increasingly unsettled. "One of the major stories was about an SEC investigation," Jayasuriya says, "and I suddenly became aware that I didn't have a clue about the business world or about economics. I didn't even know what the Dow Jones industrial average was. I had been thinking that medicine was the be-all and end-all, but at that moment I realized the relevance of business and economics to medicine."

That was in the mid-1980s, when both biotechnology and managed care were shaping medicine in new and surprising ways. "A lot was changing," Jayasuriya says, "and it became clear to me that there would be a growing

PHOTO: ANULA JAYASURIYA

need for people who could bridge the gaps and span medicine, biotechnology, and the pharmaceutical industry."

Jayasuriya was about to challenge her belief that all the best and brightest people went into science and medicine. After completing her medical degree, a doctorate in microbiology and molecular genetics from Harvard, and an internship in pediatrics at Children's Hospital in Boston, she surprised her mentors and colleagues by entering Harvard Business School in 1991. There she discovered that the broader and more integrative outlook suited her personality much better than medical practice would have. "I wanted to know more about the workings of the world,"

she says, "and to play in a bigger arena, which business allows you to do."

Jayasuriya has since worked with such companies as Skyline Ventures, which specializes in hands-on investing in early-stage health care companies, and Genomics Collaborative, Inc., a developer of proprietary research tools and services. Now living in California, she works with ATP Capital, a New York-based private equity fund dedicated to making investments in the life sciences. She also consults on projects sponsored by the National Institutes of Health's Immune Tolerance Network and at the University of California-San Francisco. "I share the dream," she says, "that many venture capitalists have: to

help build successful companies that will make available important interventions, ones that will help people stay in good health and reward investors."

Despite her devotion to her chosen career path, Jayasuriya has no regrets about earning a medical degree or a doctorate, largely because they gave her the expertise and experience needed to make critical business decisions. "I use what I learned at HMS every day," she says. "I'm constantly evaluating business plans based on cutting-edge science. My scientific knowledge plays a big role in selecting companies that are promising."

Jayasuriya is fully engaged as a venture capitalist, but also maintains her medical credentials. She is licensed in

PHOTO: ANNE HAMERSKY

## « John Freund

JOHN FREUND '80 WAS A STAR AT HARVARD Business School, graduating as a Baker Scholar and co-author of a *New York Times* bestseller, *The Official MBA Handbook*. But his decision to go to business school had earned him a cold reception from many at HMS, who resented Freund for having taken up a coveted admissions slot only to—as they perceived it—turn his back on a medical calling. "It wasn't at all a popular thing I did," Freund admits. But what he went on to accomplish has probably changed their opinion of him—and broadened their definition of a vocation of healing.

Freund enjoyed science in college and his father was a surgeon, so medical school seemed a natural choice. But from the start, he was profoundly unhappy. "Everybody hates the first two years of medical school," his father reassured him. By the time Freund made it to rotations, though, he had realized that medicine wasn't for him.



Massachusetts and California as a general practitioner, and she earns her continuing medical education credits every year. She works with the non-profit organization InterPlast, whose programs allow volunteer physicians to provide free reconstructive plastic surgery to children and adults in developing countries. Jayasuriya collaborated with InterPlast to create a program in Sri Lanka, her native country, where she travels every year to take care of patients. This experience helps her to stay connected to clinical medicine in a meaningful way. "My decision to pursue a business career wasn't a turning away from medicine," she says, "but an awakening to the larger world." ■

After graduating from business school, Freund got his start in venture capital as the original health care partner at Morgan Stanley Ventures. Then, after several years as the executive vice president of an ultrasound company, he co-founded Intuitive Surgical in 1995.

Intuitive has created the da Vinci Surgical System, robotic technology that allows surgeons to perform general laparoscopic surgery, thoracoscopic surgery, and laparoscopic radical prostatectomies. "It allows a number of minimally invasive procedures to be done that could not be done with any other technology," Freund says. The system is in use in major teaching hospitals throughout the United States.

Once Intuitive Surgical was off the ground, Freund returned to venture capital. He now serves as managing director of Skyline Ventures, an early-stage investor that helps establish health care companies. Despite his success, Freund says that profit has not been the driving force in his career.

"I've made contributions to medicine at least as important as those I would have made if I'd gone into clinical practice or research," he says. "I can return to HMS knowing that I did something significant with my medical education. I'm proud of that." ■



## ≡ Leon Palandjian

IT BEGAN AS A FLICKER IN THE PUBLIC AND SCIENTIFIC IMAGINATION WHILE Leon Palandjian '00 was still in high school, and it wouldn't come to fruition for ten years. But by the time Palandjian neared the end of his medical education, so, too, was the Human Genome Project approaching completion—and captivating young doctors and scientists eager for exploration, new map in hand.

Palandjian, a cell biology research fellow at HMS who had worked on RNA splicing, found himself on the edge of a brand-new scientific terrain; his chosen field of genomics hadn't existed before the Human Genome Project created it. He was intrigued by the potential of gene therapy to change the way disease is diagnosed and treated—indeed, to alter the practice of medicine itself.

"I sensed a huge revolution about to happen in biotechnology," Palandjian says, "the discovery of new genes, a set of technology applications that would lead to novel therapeutics and diagnostics. I didn't go into business because I was dissatisfied with medicine, but because I felt compelled to work in biotechnology and medical technology."

PHOTO: KATHLEEN DOOHER

Palandjian had entered HMS with a business background that included three years as a management associate at SmithKline Beecham, but also with an open mind about a career as a physician. He had found himself drawn to medical school during his stint in the pharmaceutical industry: "I had become more interested in health and wanted to pursue that in a deeper way than I could have in a business context."

During his final year of medical school, Palandjian accepted a position with Flagship Ventures, a biotechnology venture capital firm based in Cambridge, Massachusetts. There he found the opportunity to combine his passion for medicine with his business acumen. He worked hard to help build Flagship's portfolio, which now comprises a dozen life science companies. One of these, Adaptive Therapeutics, focuses on novel classes of antibiotics for a spectrum of infectious diseases. From a platform technology developed by a professor at the Scripps Research Institute, Palandjian led Flagship's efforts to co-found the company, license the technology, write the business plan, and provide the capital. He now works closely with several other Flagship companies that are leveraging applied genomics technologies to develop new products.

"The common theme in the work I do is early-stage entrepreneurship and venture investing," he says. "These companies serve as a bridge from bench research to the marketplace. And my medical background allows me to recognize the unmet needs in the marketplace."

Palandjian relishes life on the cutting edge of biotech and believes that one of the most fascinating and rewarding aspects of helping a biotechnology company succeed is fostering cross-pollination among disciplines. "In academics, people tend to work in silos of expertise," he says. "But in the context of a venture-backed company, it's possible to get people from many different disciplines to work together to achieve a focused common goal. You can get physicians in the same room with computer scientists, chemists, biologists, and business managers, and innovation emerges at the intersection of their different disciplines." ■

## Louis Lange

WHEN LOUIS LANGE '74 MADE HIS MOMENTOUS DECISION TO LEAVE A TWO-decade career in academic medicine for the world of private enterprise, he was following the old adage, "Leap, and the net will appear." Half of his friends supported his decision, but the other half thought he was out of his mind. "People who made such choices used to be seen as failed doctors," Lange says. "Luckily for me, that's not true anymore."

As chief executive officer of CV Therapeutics in Palo Alto, California, Lange has positioned himself at the helm of a company that is pioneering a new biomedical discipline: molecular cardiology. "Drug discovery and



PHOTO: COURTESY OF HANE CHOW



# Stephen Sherwin

development is the best team sport," Lange says. "You have to integrate all your skills and depend on all disciplines, from genomics to marketing." But despite his love of teamwork, Lange began his career as a solo player.

Lange's initial focus was molecular research in cardiology, which only a handful of scientists were pursuing during the 1970s. In 1980 he joined the faculty of Washington University, where he spent 12 years and became chief of cardiology. Lange's research specialty was rare and desirable, and he was widely recruited. He transferred to the Jewish Hospital of St. Louis, where he ran a division of about a hundred people and a large laboratory. This traditional position eventually led Lange away from the well-trodden path.

"Over time, the job came to have a great deal of visibility," Lange says. "For the hospital to be successful, cardiology had to be successful. I was good at attracting business and adding new people, forming relationships with practice groups. But I had no control over the money that came in. I was constantly begging the hospital for money for programs."

When Lange received an offer to be the head of medicine at another major hospital, he decided to make a change. He joined a venture group with the vision of a broad-based cardiac technology company; in 1992, that vision developed into CV Therapeutics. The company has since developed programs in cardiac metabolism, adenosine receptor research, atherosclerosis, cell cycle inhibition, and cardiovascular genomics. CV Therapeutics went public in 1996 and now has four products in clinical development.

"I went to college in the late '60s," Lange says, "and like most of my classmates, I hated big companies. But biotech changed everything. Small biotech companies can focus and make decisions and move. Dyed-in-the-wool academicians like myself have begun to start companies where premier academic research can take place." ■



"LOOK AT THIS!" STEPHEN Sherwin '74 recalls exclaiming as he read the class book at his HMS tenth reunion. "Somebody in our class is stuck doing insurance physicals!" Glancing at the single listing for "industrial physician" that had elicited Sherwin's surprise, the classmate who had compiled the book replied, "Actually, no, Steve. That's *you*." Says Sherwin, "He didn't know a better way to categorize what I was doing. That's how unusual a career in biotech was in those days."

Sherwin had started out along a more conventional path, with an interest in medical oncology that took him to the National Cancer Institute. But in the late 1970s, he began hearing more and more about the brand-new biotechnology industry. "From the late '70s through the mid-'80s, biotech was regarded as so far out there as to be little more than a dream," Sherwin says. "What drew me to it was my belief that I could pursue the application of these new technologies to the field of cancer medicine better and faster in a biotech company than I could anywhere else."

He left traditional academic medicine in 1983 to serve as associate director of clinical research at Genentech, then a startup of about a hundred employees and now one of the world's leading biotechnology companies. Although Sherwin had had no previous inclination to explore the business world, by the late 1980s he found himself becoming interested in topics peripheral to medicine—investor activities and business transactions, for example. In 1990, when Genentech had grown to a staff of around 2,000, Sherwin decided to explore the next wave of technology—gene and cell therapies—by starting up a new, smaller company in San Francisco, Cell Genesys, where he now serves as chairman and CEO.

During his early years at Cell Genesys, Sherwin continued to see patients as an attending physician at UCSF and San Francisco General Hospital, but he ultimately hung up his stethoscope in the mid-1990s, when the demands of running his company—and a second company, Abgenix, which he co-founded—proved all-absorbing. He still misses everyday clinical practice, but has no regrets about following his medical interests into biotechnology, or about the business skills he has acquired along the way.

"I've conducted more business transactions in my life than I could ever have imagined," Sherwin says. "During medical school and residency, I could never have predicted the path that I've traveled, but I feel very lucky to have found it." ■

**UNDER WRAPS:** A woman from the Persian Gulf region, clad in Islamic dress meant to enforce modesty among women, was one of Farrokh Saidi's patients in 1962.

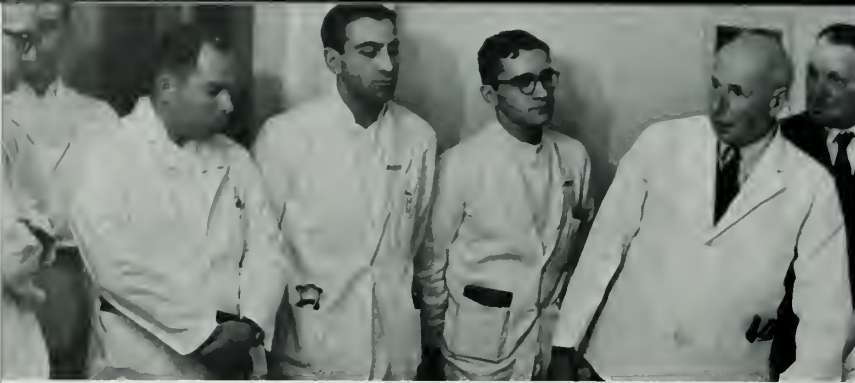




# RETURN ● OF THE Native

A surgeon finds his introduction to medical practice in his ancient homeland eased by the wisdom of his Harvard Medical School professors

*by* FARROKH SAIDI IT WAS EARLY IN THE MORNING when our small group of third-year HMS students made its way to the fluoroscopy room at Beth Israel Hospital, escorted by the chief of radiology, Felix Fleischner. When we arrived, a patient was already on the table and the lights were off. Fleischner proceeded to move the fluoroscopic screen over the patient's body while we watched, not really understanding what was happening. ¶ "Now hold your breath," Fleischner instructed the patient as he continued examining her stomach. After what seemed an impossibly long time, he briskly informed the patient: "Now you may breathe again."



**LESSONS FROM LUMINARIES:** The wisdom of such HMS mentors as Fuller Albright (right) and Edward Churchill (above, second from right) proved invaluable in easing Saidi's entry into medicine in Iran.

The lights came on and, before the next patient could be wheeled in, my closest buddy, Lou Rashin, cleared his throat and dared to ask how the patient could possibly have been expected not to breathe for so long. Fleischner seemed prepared for the question and gave us an answer—and a lesson—I would never forget: "As a doctor, you should always make sure others realize you are in charge!"

That was in Boston, back in 1952.

Cut to the spring of 1980 in the capital city of Tehran. We were well into the Iranian Islamic Revolution, which had exploded the previous year. His Imperial Majesty, the Shahanshah, had fled the country two months earlier, bringing to a dramatic close 25 centuries of uninterrupted absolute monarchy.

More riveting than anything else the revolution had brought, perhaps, was the change in social behavior. People looked at each other differently, suspicious of each other's true political leanings. Many feared being labeled anti-revolutionary, and some went out of their way to appear fervidly committed to the new regime, much as the Jacobins had done during the French Revolution.

I was now chief surgeon at a general hospital in southern Tehran. A new cohort of medical students, 16 in all, had arrived that morning. These students seemed livelier than those in previous groups, even a bit boisterous. I passed their attitude off as the nervousness associated with their first day on the ward.

I welcomed the students into my office, where I asked them to sit down, divide themselves into groups of four, and wait quietly until I found patients for them to interview and examine. By the time I reappeared, they had spilled out noisily into the corridor. Good-naturedly, but more firmly this time, I ushered them back into the office, ordering them this time to remain inside. I went back to the ward and found two more patients with lumps and bumps. When I returned a second time, I discovered that the entire group had again poured rambunctiously out of the room. Now irritated, I exclaimed, "Damn it! I thought I told you folks to stay put!"

A rampant revolutionary  
well-behaved and comp



A male student, who appeared to be the leader of the group, pushed forward and demanded in a menacing tone: "What did you say?" He seemed ready to lunge.

A rampant revolutionary fervor had taken hold of these youngsters. Usually well-behaved and compliant, they were now challenging every authority, flexing their muscles to prove to themselves, no doubt, that they were not behind the times. This was no moment for me, however, to get lost in socio-psychological musings. I had to decide quickly on an appropriate response to an unambiguous challenge. An apology would have been tantamount to capitulation and the loss of my teaching authority.

Remembering Fleischner's advice, I knew exactly what to say: "You heard me! Don't sit down and don't stay put if you don't want to. But find someone else who is willing to teach you." With that, I turned on my heel and walked away before my would-be assailant could decide on his next move.

Predictably, several of the more sedate students caught up with me on the stairway, apologetically asking me to return and teach them. I was in charge again.



fervor had taken hold of these youngsters. Usually  
liant, they were now challenging every authority.

### Native Son

I had always known that I would return to Iran. I had arrived in the United States in the summer of 1946 and reestablished my native land as my permanent home 15 years later. Although I naturally expected a transitional period, nothing could have dampened the culture shock I experienced upon my homecoming.

HMS is an integral part of the American medical complex, and almost everything on the medical scene, anywhere in the country, is accessible to its graduates. Should an unfamiliar situation arise and local medical authorities be unable to solve a problem, a telephone call will straighten things out in no time. Not so when one is 8,000 miles away from Boston, with no long-distance communication available.

These cultural differences weighed on my mind as, once home, I mulled two alternatives: to settle in Tehran, where I had been born and where, with my connections, I could have easily melted into high society, made lots of money, and even embarked on a political career; or to join the recently established Nemazee Hospital, located in the remote southern city of Shiraz.

The Nemazee had been modeled on the American hospital system, and the appointment carried the additional lure of teaching at the fledgling Shiraz Medical School. For me, the choice was clear; after a month of welcoming revelry in Tehran, I flew to southern Iran to download all that I had been programmed for at HMS.

### Remembering the Titans

Back to my medical training in Boston in the early 1950s: in retrospect, it seems that *who* taught us was more important than *what* we were taught. The galaxy of outstanding teachers made us feel like acolytes at an ancient Greek temple of learning. How could anyone forget the lectures of Francis Moore '39 on burns and postoperative care? Fuller Albright '24, incapacitated as he was with Parkinson's disease, possessed an incredible knack for getting to the core of a problem with one incisive statement. Herrman Blumgart '21

saw us off on our internship year with the adage of "chastity, poverty, and obedience," a valuable parting gift.

The pungency and cogency of Edward Churchill's remarks more than made up for their brevity. Churchill, a 1920 graduate of HMS, was revered by successive generations of surgical house staff at Massachusetts General Hospital, where one day a newly manufactured patient bed was put on display. Churchill watched as the elderly patient, nearly moribund, was twisted and turned about as one of the doctors punched various buttons. We were all wondering what the engineers would be developing next when Churchill left the room muttering "Obscene!" That one word engraved itself in my mind, guarding me against blind infatuation with technological innovations, a lesson I drew upon when I began my work in Shiraz years later.

But my favorite mentor, by a long shot, was Robert "Hawk" Shaw '45. Hawk, I was certain, could see around corners. Together we started open-heart surgery at Massachusetts General Hospital and, as the first pump man there, I had become entranced by the emerging technology. Yet Bob convinced me that we did not need a cell photometer. "The best photometer," he proclaimed, "is already installed in our retina, and any surgeon who cannot instantly detect unoxygenated blood should not be operating!"

The intellectual honesty, moral candor, and refreshing humanism of many of the giants of our days at HMS lent them an aura of permanency. Some of the pearls I would glean from them proved invaluable afterward.

### Operating by the Book

Mohammed Nemazee was a wealthy Iranian philanthropist who, in the mid-1950s, had donated a large estate in his hometown of Shiraz for the construction of the most modern 150-bed general hospital in that region of the world. With loving attention to detail, he had created a truly magnificent health care center, complete with an adjoining nursing school. It had been built, he declared, "for the express

purpose of introducing modern medical education and health care to Iran."

The hospital lacked nothing in equipment, boasting even an iron lung. Allen Whipple, a physician born in Iran of American missionary parents and imbued with a deep-seated love for the country, had assumed the presidency of the Iran Foundation in New York City and managed Nemazee Hospital from a distance. Principal clinical positions at the hospital were filled with American personnel, because too few Iranian specialists were available. Everything looked auspicious and the opportunity to help transplant modern, American-style medicine to Iran was irresistible.

Down the road from Nemazee Hospital was a 100-bed university teaching hospital, Saadi. It had been built in early World War II days and, as a government-supported institution, it had been allowed to crumble under the heavy burden of having to deliver care to more than four million people. When I entered it for the first time, I had the feeling of being transported back to the Crimean War era. Only five glass syringes were available for the entire 30-bed surgical ward and not a single nasogastric tube could be found. A sole autoclave—manufactured in Akron, Ohio, in 1926—stood in a corner, still efficiently serving the two dilapidated operating rooms, if not the whole hospital. Standards of care, I noted with horror, matched the physical facilities: every ankle fracture ended up in amputation, and records showed that in-hospital mortality rates hovered around 30 percent.

These two health care institutions, separated by only one and a half kilometers, were worlds apart functionally; while Saadi Hospital was the real Iran, Nemazee Hospital represented its dream. Yet the chief of surgery at Nemazee Hospital was a retired American surgeon who did not operate. He spent most of his time chairing committees and preparing color-coded chart folders. And a younger American surgeon on staff had the strange habit of operating with an open book or journal propped on a music stand to guide him in his dissections. In this manner, he started off one early Sunday morning on his first ever femoropopliteal bypass graft. By about five in the afternoon he called for the 11th unit of blood. At nine that night, it was the surgical resident who was frantically calling for the 18th blood unit, because the surgeon had left the hospital for Sunday evening prayers at a local missionary church.

When I raised the issue with our chief of surgery a few days later, he explained that our young colleague had been gaining experience to prepare himself for his thoracic boards. Respec-



fully I inquired whether this mode of operation was ethical, and whether this type of patient management would not come under serious scrutiny in American medical circles. I was curtly dismissed with, "This is not America!"

I next took the matter to another chief of service, an Iranian specialist who, on the strength of his American education, had become our moral standard-bearer. His analysis was even more shattering: "Above all, we must protect the hospital's reputation. You had better ignore the whole matter. So what if a leg has to come off along the way?"

That attitude was certainly not in line with what Nemazee Hospital had been proclaimed to stand for. But I had not been taught at HMS or its teaching hospitals how to handle such situations, and the nearest center of adjudication was 8,000 miles away. And supposing I did manage to convey my concerns to the Iran Foundation in New York—what could be done?

### Back to the Future

I resigned from Nemazee Hospital and moved a kilometer and a half down the road, to Saadi Hospital. There I found what every surgical resident dreams of: an unending stream of classical surgical cases. Surgical pathology that I thought existed only in old textbooks—from Ludwig's angina to noma to advanced tuberculosis pericarditis—kept coming. And not a single case of colonic diverticulitis appeared. My only regret was that I had no colleague with whom I could marvel at how well those conditions responded to treatment.

I had meant to inaugurate open heart surgery in Iran but quickly shelved those plans without any qualms as I busied myself with more mundane but just as interesting clinical situations. Lacking an electric dermatome, for example, I used an old-fashioned open razorblade to take freehand skin grafts, the way Bradford Cannon '33 had taught me.

It was Hawk Shaw, however, whom I felt looking over my shoulder. One day, a few buildings away from our hospital, a young student collapsed with ventricular fibrillation. The closest defibrillator was nearly 2,000 miles away, in Lebanon. But Hawk had taught me that all that was needed were two broad metal retractors attached to an



# Only five glass syringes were available for the entire 30-bed surgical ward and not a single nasogastric tube could be found.

electric cable that could be plugged quickly into a wall socket. It worked! And lo and behold: sometime later Hawk actually showed up and stayed with us for a whole month.

The greatest accolade I ever received came from Cushman Haagensen '23, who, after spending two weeks with us, wrote me that he "did not know of any HMS graduate who had accomplished so much for his people." I felt like I had finally graduated. It was as if I were a red blood cell, no longer floating free but inextricably caught in a coagulum, that grand structural-functional-moral design called "medicine."

But that wonderfully fulfilling professional experience could not last forever; it was pure politics that uprooted me from Shiraz. Those who know the story of "The Emperor's New Clothes" will recognize the political settings of pre-revolutionary Iran. I am certain that the Shah meant well for his country. But he could not extricate himself from a deeply felt need for self-aggrandizement.

And in due course, the Shah appointed a new chancellor whose honesty was limited to announcing his intention to become the next prime minister. He set out to impress and ingratiate himself with the Shah by ordering the performance of hair-raising transplantation exercises strictly for self-directed propaganda purposes. Ethical considerations meant nothing. I protested vehemently. A Faustian agreement was proffered; I promptly declined it.

Nothing in my HMS education could have prepared me for this experience. I was spared the mental anguish of having to resign. Yet I had to submit to the humiliation of being dismissed for having openly criticized the authorities. What pained me most, however, was that the motto "This is not America" had become too glib an excuse, even for those Iranian colleagues who had trained in the United States but who now preferred to look the other way.

Yet it may have been that particular confrontation with the establishment in Shiraz that saved my neck when the revolution exploded a few years later. To be sure, we had our revolutionary *komitehs*—a kind of culture police charged with enforcing Islamic mores in post-revolutionary

Iran—and I did carry for quite some time the label of a *taghooti*—a member of the bourgeois class despised by the revolutionaries as decadent and evil—the equivalent of an *aristo* from French Revolutionary times. Other than a few years of being barred from leaving the country, though, I suffered no indignities. In fact, I was allowed to run the surgical service at the hospital in southern Tehran.

As I continue to practice, friends and colleagues often ask me if Iran's medical situation is any better now than it was before the revolution. My unreservedly affirmative answer to this question is framed by the lessons I learned at HMS so many years ago that allowed me to survive the last great revolution of the twentieth century. My fondness for history, and in particular Persian history, tells me that we had to have a revolution to wake us up from a 25 century-long slumber. That upheaval was inevitable, as Edward Churchill had foreseen when I last met him in his office in late 1960, just before I left the United States for Iran. It was he who had said, "Developed countries have wants, while developing countries have needs that must first be met."

Having gone through interesting and so often gripping times, I am not particularly troubled by the current trend of international events. Downright humanism and basic good will are still everywhere—and plentiful. My survival thus far has endowed me with neither any particular sociopolitical insights, nor the ability to foresee the future of Iran. Given its natural resources, however, the most valuable of which is the vast number of highly intelligent and dedicated young Iranians, we should do well. My own experience will not be repeated by anyone, as the situation in Iran has changed drastically since my days in Shiraz. And I hope the situation at HMS has not changed at all in the interim, with a string of outstanding teachers still forming the core of its educational mission. ■

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*Farrokh Saidi '54, a retired general and thoracic surgeon, continues to teach at the Beheshti University of Medical Science in Tehran.*

*Robert "Hawk" Shaw '45 died earlier this year; his obituary can be found on page 63.*

**WARD ZONE:** Patients in the surgical ward of Saadi Hospital in 1961. The government-supported, 100-bed teaching hospital was charged with delivering care to more than four million people.

by DONALD W. BICKLEY

# HEAVY METAL

A physician recalls patient encounters with metals—from gold injections to arsenic doses—during his seven decades of house calls and hospital visits

## MY FAVORITE MARTIANS



**SOCIETY DOCTORS IN NEW YORK CITY KEPT THE PEDIATRIC SERVICE AT** Fifth Avenue Hospital full of chattering youngsters with mild and merely irritating upper respiratory infections, some with just the sniffles. Rather than coping with illness of any degree, their busy mothers would pack them off to the hospital for a few days.

Walking into the treatment room on any given morning during a brief surgical stint at the hospital in 1934, I would find a row of children with long applicators protruding from each nostril. The cotton-tipped ends of the applicators had been dipped in Argyrol—a dark brown concentrated silver suspension—and would be left in the nostrils for 15 minutes, several times a day. That was the full extent of the children's treatment. They would return home with a prescription for more Argyrol nose drops, to be used for any little cough or cold.

A few months later, during my internship at Massachusetts General Hospital, we admitted a mother and daughter to one of the wards. They sat in bed, side by side, their deep blue skin scintillating in the bright sunlight streaming through the window. They looked like two glitzy blue Martians resting on very white sheets.

They too had used Argyrol nose drops, and the silver had entered their bloodstreams, turning their skin midnight blue—a silver side effect that would never fade or tarnish.





## Off the Top of Their Heads

IN 1935, THE DERMATOLOGY CLINIC AT MASSACHUSETTS GENERAL HOSPITAL WAS suddenly besieged by a host of nearly identical young women. They all wore scarves tied around their heads and often sobbed as they complained of headaches and nausea. Despite their distress, they displayed strange, expressionless faces.

When we removed their scarves, we discovered that they were entirely bald; even their eyebrows and eyelashes were missing. Some still had axillary and pubic hair; a few had a small tuft of the inner eyebrow left. And their gums were often a peculiar shade of blue.

We found out that the young ladies had all been using a newly launched depilatory prepared with thallium acetate. The metal rendered the lotion highly effective: absorbed through the skin into the bloodstream, it killed nearly every hair cell it reached. Sadly, we had no treatment to offer the young women; their hair loss was permanent. The state board of health soon closed the depilatory company down.

## Babe Magnet

A MOTHER BROUGHT HER KINDERGARTNER into my office in Waterloo, Iowa, in 1940. "It hurts right here," complained the little girl, rubbing her temple just above the hairline.

I checked her carefully. She had neither fever nor nasal mucous, her throat was normal, her eardrums showed no redness or infection. The glands in her neck were small and non-tender, and her heartbeat was regular. I was about to order a kidney check when the girl again put her finger to her temple and said, "It's sharp right *here*."

I focused the beam of my flashlight on the spot she fingered. Sure enough, something bright glinted in the light, just beneath her skin. Using forceps, I pulled out an inch-long stainless-steel needle. "That's one of my sewing needles!" exclaimed the mother.

"I always keep my needles in the lapel of my jacket when I sew," the mother added. "Whenever my baby would cry, I would cuddle her onto my shoulder until I could get her something to eat. Why, that must have been five years ago!"

## NAME YOUR POISON

**A**T TEN O'CLOCK ONE NIGHT, I WAS CALLED TO THE HOME of a middle-aged man afflicted with severe abdominal cramps and repeated vomiting. It was 1936, just as I was beginning my medical practice. I was inexperienced, and I wondered why the wife had chosen me instead of their family doctor.

Given that the man's appendix had been removed years before, his bowel sounds were greatly exaggerated, and we were seeing a number of cases of the summer's "intestinal flu," gastroenteritis seemed to be the most logical diagnosis. I gave the man a hypodermic and sat at his bedside until I could be sure that his pain had subsided.

Bit by bit, his story emerged. He was in the midst of divorcing his first wife, and from the obviously unsympathetic attitude of both the wife and her grown daughter by a previous marriage, I could tell that this had been a disastrous union.

Sitting close to the bedroom door, I could hear mother and daughter talking across a narrow hallway. "How long will it take?" whispered the daughter. "Just a little longer," her mother murmured.

A few minutes later, just when my hypodermic was beginning to take effect, the man gave a sudden cry and died, right before my eyes. We called the undertaker around midnight, and I returned home to mull the women's whispers over, struck by their businesslike acceptance of the man's death.

Early the next morning I called the mortician to request an autopsy, convinced that arsenic had killed my patient. "There's something very odd about that family," the mortician said, interrupting me. "They insisted that we take the body to Cedar Rapids last night and have it cremated at once—some sort of religious requirement, they said."

## Almond Joy

IT WAS JUST AFTER D-DAY, AND WE WERE receiving casualties from Omaha Beach. A young corporal had survived his first operation, during which we had retrieved the bullet that had perforated his small bowel just eight or ten inches below his stomach. But a fistula had developed through the wound, and we watched a trickle of fluid—a mixture of bile, pancreatic juice, and stomach acid—wet down his dressings.

One of our best surgeons opened the patient up again but found a mass of adhesive, distorted anatomy so gross that he was forced to back out of the abdomen without being able to stop the flow. There the soldier lay, losing weight, unable to eat, with a stomach tube suctioning and an IV going, day after day. As he continued to lose electrolytes, he became weaker and weaker.

Then his stomach tube plugged off, and the only tube I had left was a relic from World War I, with a metal tip

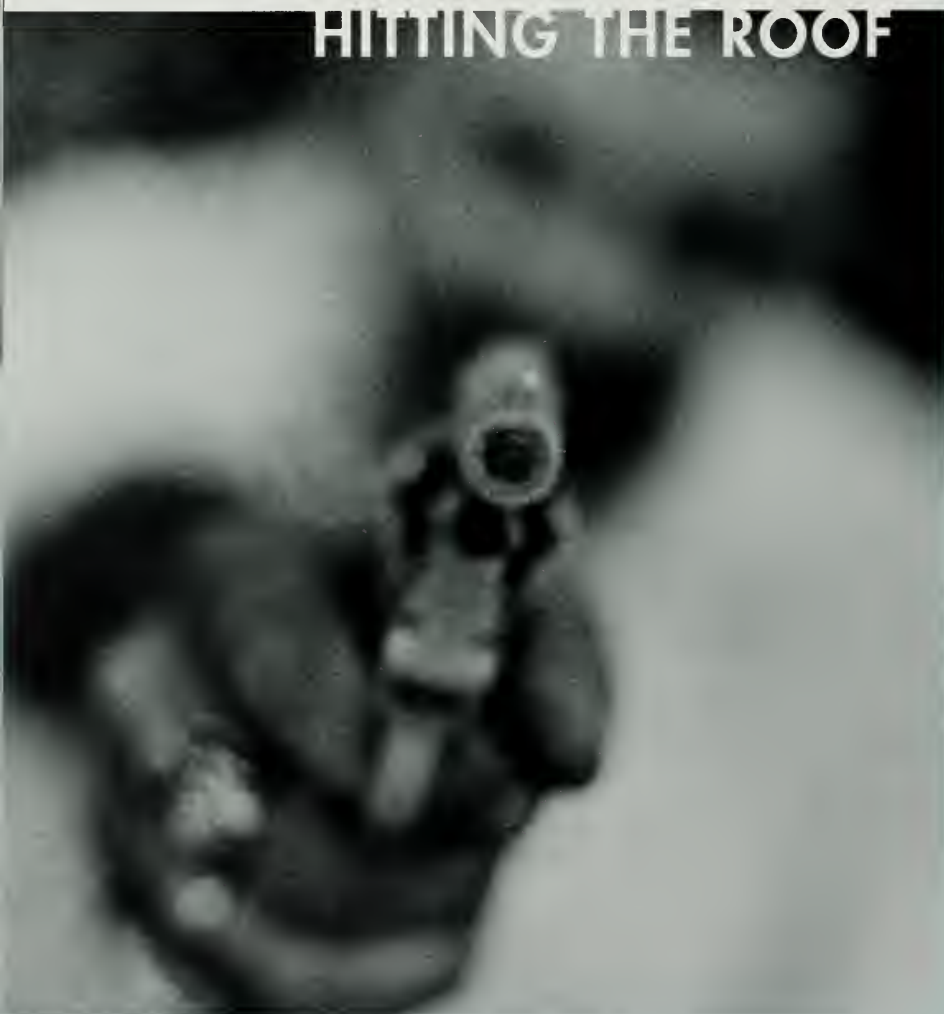


the size and shape of an almond. The tip was too large to go through his nose, so I fed it through his mouth. The soldier was by then too weak even to have a gag reflex. He was dying.

The next morning, the ward nurse met me at the door and proclaimed, "Corporal Stevens has stopped draining!" The last wet dressing had been removed about midnight. The wound was dry at last.

I took another x-ray of the patient's abdomen. It showed the almond tip angled at 90 degrees to the tube and plugging the fistula from the inside! We left the tube in place for another two weeks, administered transfusions and more intravenous fluids, and finally pulled the tube out carefully. That ancient metal tip had saved a young soldier's life.

## HITTING THE ROOF



**A**T THE TRIAL, THE YOUNG WOMAN testified that her lover had shot her through the chest from across the room, enraged because she had threatened to leave him. He countered that she had been creeping up on him with a knife in her hand, bent almost to the floor, and he had shot her only at the last moment in self-defense. There were no witnesses.

I cared for the woman from the time she was brought into the hospital with a sucking wound in the apex of her lung. She barely survived. Day after day I feared that, despite oxygen and repeated transfusions, I could not keep her with us. But she lived to file a charge of attempted murder.

During the trial, I testified that we had found the bullet lodged against her ischium, at the bottom of her pelvis. It had gone from the top of her lung, through her chest, then through her abdomen. The bullet's trajectory revealed that the only way her story could be true was if her lover had shot her while clinging to the ceiling.

The case was ruled for the defendant. He did not file suit against her, allowing only, "I didn't realize that she hated me so much."



# FOOL'S GOLD

## COULD NOT DISSUADE MY

middle-aged patient from trying the new gold shots for her rheumatoid arthritis. "I won't give you the gold," I told her firmly, "because it has some dangerous side effects." Determined, my patient found a physician who was administering gold shots to anyone who requested them. I didn't hear from her for several months. Then she called me to her home, too ill to make the trip to my office.

I found this once attractive woman with large areas of denuded skin on her arms, shoulders, and back, making it too painful for her to lie flat. She had developed a very sensitive exfoliative dermatitis, and her skin was peeling off in large sheets—the very complication I had warned her about. By the time she died a week later, she had lost more than a third of her skin and had become severely toxic.

The gold doctor had skipped town as soon as he learned of her condition, but not before making a fortune. It was only when the woman was dying that her daughter mentioned, "Mother never could wear gold earrings, you know. They always made her skin break out."



Donald W. Bickley '34 retired in 2001, after 67 years of practicing medicine, primarily in Waterloo, Iowa.

# MIDWIFERY

# MEDICINE

DESPITE HAUNTING TRAGEDY, OBSTETRICAL PIONEER  
WALTER CHANNING CREATED A LEGACY OF COMPASSION  
THAT HAS PERSISTED INTO MODERN TIMES



*by* AMALIE M. KASS

IN THE SUMMER OF 1948, A 26-YEAR-OLD BOSTON woman was in labor with her second child. Summoned to her bedside, Walter Channing encountered a patient in alarming straits. She was hemorrhaging, and the physician who had initially been called was so intimidated by the possibility of her dying that he was afraid to examine her. It was up to Channing to determine the cause of her bleeding and to terminate her labor.

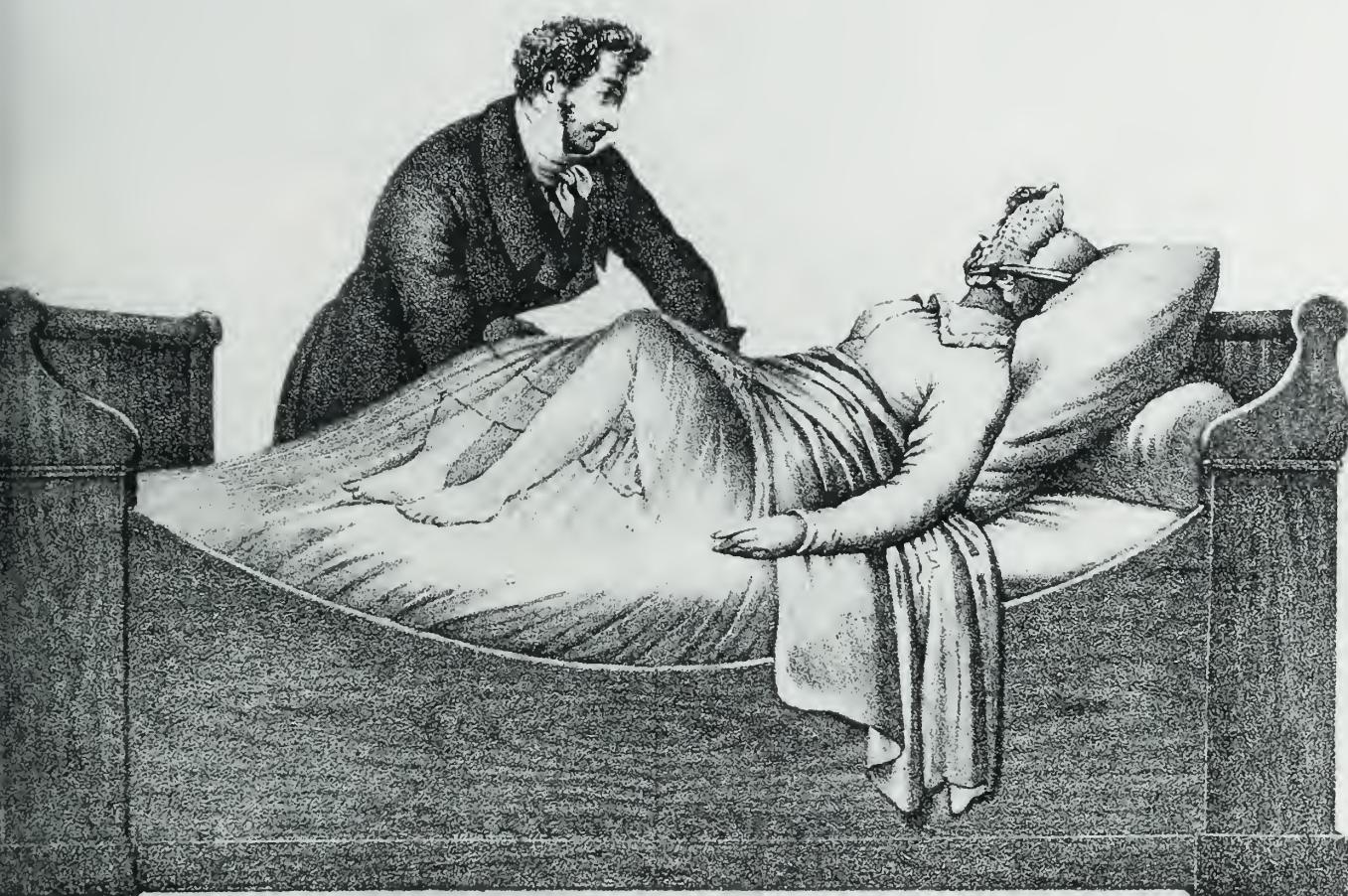
Channing found the woman almost pulseless, her skin pale and icy, her voice feeble, and her overall appearance one of extreme exhaustion. His notes reveal the gravity of her predicament: "I learned that she had been flowing six days; that she had

lost much blood—by her report, a gallon. The case was apparently so hopeless that I took the physician and a friend aside to prepare them for the worst result that might follow the only means which promised any good."

Upon examining the patient, Channing discovered the placenta still firmly attached to a portion of the cervix. "It was at once separated entirely from the uterus, and not the least hemorrhage accompanied the separation." Channing extracted the fetus, already dead for several days, and the mother made a good recovery.

For more than 50 years, Walter Channing, who served as dean of Harvard Med-





MASSACHUSETTS HISTORICAL SOCIETY. ILLUSTRATION IN THE FRANKLIN COUNTY HISTORICAL SOCIETY. 1860s. 1 ME.

ical School for more than two decades, was an unnamed presence in the lives of countless Boston women. It was an era when women were loath to discuss the realities of their pregnancies and deliveries. Yet they counted on him to provide as easy and safe a labor as possible. His expertise and experience, as well as his compassion and concern, led to a reputation among his colleagues and patients that has endured into the twenty-first century.

But Channing's story reveals more than the practice of obstetrics or the reproductive lives of nineteenth-century women. He instructed hundreds of young men in "the art of midwifery" as well as in medical jurispru-

dence, and was instrumental in the creation of one of the nation's first lying-in hospitals for poor women. His position among the small group of physicians who dominated medicine in antebellum Boston placed him among the most important leaders of the profession. In at least one significant change in the practice of medicine and obstetrics—the use of anesthesia in childbirth—Channing was the major force in its acceptance.

### The Home Front

In eighteenth- and nineteenth-century America, obstetrics presented difficulties that distinguished it from general medical practice.

**A HOUSE OFFICER AND A GENTLEMAN:**  
In the mid-1800s, decorum dictated that male obstetricians avert their eyes as much as possible during patient exams. They also often relied on female attendants to transmit indirectly to the patient any delicate orders related to bodily functions.

was an era when women were loath to discuss the realities of their pregnancies and deliveries. Yet they counted on Channing to provide as easy and safe a labor as possible.

The nature of childbirth meant that a physician could be summoned without warning at any time, day or night, and might have to remain with his patient for many hours, even for several days. He would attend to the woman at a particularly challenging and intimate time, when her fears of pain and death were often stronger than her hopes for a healthy baby.

Except for the poor and homeless women who gave birth at Boston's lying-in hospital, deliveries generally took place in the home of the laboring woman. Channing brought his basic equipment with him: a female catheter; sharp scissors and strong thread; lard or oil; drugs such as belladonna, ergot, and laudanum; a lancet; and any other instruments he might need in an emergency. In time he brought his stethoscope, and still later he often had anesthesia with him.

The largest bedroom was usually set aside for the event. Physicians like Channing thought that good ventilation was a requisite for health and preferred an airy room that was not overheated. A bed would have been prepared, one mattress atop another, covered with a piece of oiled silk, untanned skin, or layers of blankets. If possible, the lower end of the bed was raised so that the woman's pelvis would be higher than the rest of her body; mattresses were soft and Channing wanted to make sure the pelvis was well supported.

Upon his arrival, Channing would find his patient fully clothed in loose-fitting garments, a cap upon her head. She might have had a heavy meal shortly before his arrival. He noted one who "had eaten a hearty breakfast of meat and potatoes, while labor was present," and another who had dined on baked beans and huckleberry pie.

#### Hard Labor

Everyone, in the era in which Channing practiced, had a friend, mother, or sister who had died in childbirth; everyone had a close relative whose baby was born dead or died soon after. Women feared pregnancy and labor, and some

even hesitated to marry because they knew motherhood would soon be expected of them. Channing often reflected on "the death, the sorrow, the wide, wide misery" that were part of obstetrical practice.

In negotiating the difficulties associated with childbirth, Channing tried to avoid "meddlesome midwifery," a term used in nineteenth-century obstetrical textbooks to caution practitioners against unnecessary interference in childbirth, as well as by critics of male physicians who practiced obstetrics. Yet he could and did employ many interventions when needed. He eased difficult labors with opium or by bleeding, both of which appeared to relax the patient and gave respite from pain, though excessive use might produce a negative effect. He tried to stimulate ineffective contractions with ergot, though again potential harm could result if used inappropriately.

Channing administered cathartics and enemas in the belief that they would stimulate contractions, or at least prevent "costiveness," or constipation, a generally feared symptom in nineteenth-century medicine. If the cervix remained closed, he might try gently dilating it with his finger or applying belladonna. If the amniotic sac remained intact and seemed to impede progress, he punctured it. He usually performed this with a sharp fingernail, though once he mentioned use of "a large knitting needle with a round blunt end," and another time a wire. When the fetus was sufficiently low in the pelvis, with head first, he employed forceps if the patient had greatly weakened.

When the child presented in a position other than headfirst, Channing initially made sure spontaneous evolution would not occur, and then decided whether he could successfully turn the child or if he would have to remove the baby by the feet. If he could intervene soon enough, he hoped to shorten the labor and save the child's life. Turning was excruciatingly painful for the mother, and sometimes agonizing also for the physician whose hand could be in the womb during a strong contraction and might be compressed between the fetus and uterus.



Channing used instruments—including forceps, levers, and crochets—as a last resort when turning was not possible, the mother’s life was threatened, or the baby was impacted in the pelvis. His primary concern was the safety of the mother, even at the expense of the child. He usually tried forceps first, but if the head remained impacted he sometimes had to compress the skull. If the pelvic opening proved too small to permit removal of the rest of the fetus, he dismembered it, pulling out the parts with a blunt hook.

The decision to use instruments was difficult, in part because of possible damage to the mother, the baby, or both, and in part because of the horror of such procedures. Until the advent of anesthesia in 1846, the mother was conscious. Family or friends in attendance had to witness the arduous operation. Channing always sought the opinion and assistance of another physician. And before instruments were applied, Channing informed the woman directly or through attendants. In a few cases she or her family refused permission: “I proposed to deliver by the forceps. Dr. — strongly advised this measure. The patient would not permit it. She said she was perfectly easy and would sooner die than submit to any operation. It was already too late and she died in a few hours.”

### Numbers Tell the Tale

The rate of maternal mortality in Channing’s practice is known for 195 clinical encounters described in a list of his midwifery cases from 1811 to 1822. Two of 18 women who had miscarriages died. One was in her fourth month and had had a previous attack of severe dysentery, which may have caused the miscarriage and led to septic shock or renal failure. The other died of convulsions. Of the 177 full-term deliveries, eight women died (just over 4 percent), five due to infection, and one each to convulsions, dysentery, and tuberculosis. In two cases of infection the mother recovered.

The mortality rate among the babies delivered in the early years of Channing’s practice is



also known. Forty-one full term babies died (nearly 23 percent of the total); 14 were stillborn and 27 died soon after birth. Half the stillbirths and infant deaths occurred in the first three years of his practice, when he was delivering primarily poor women.

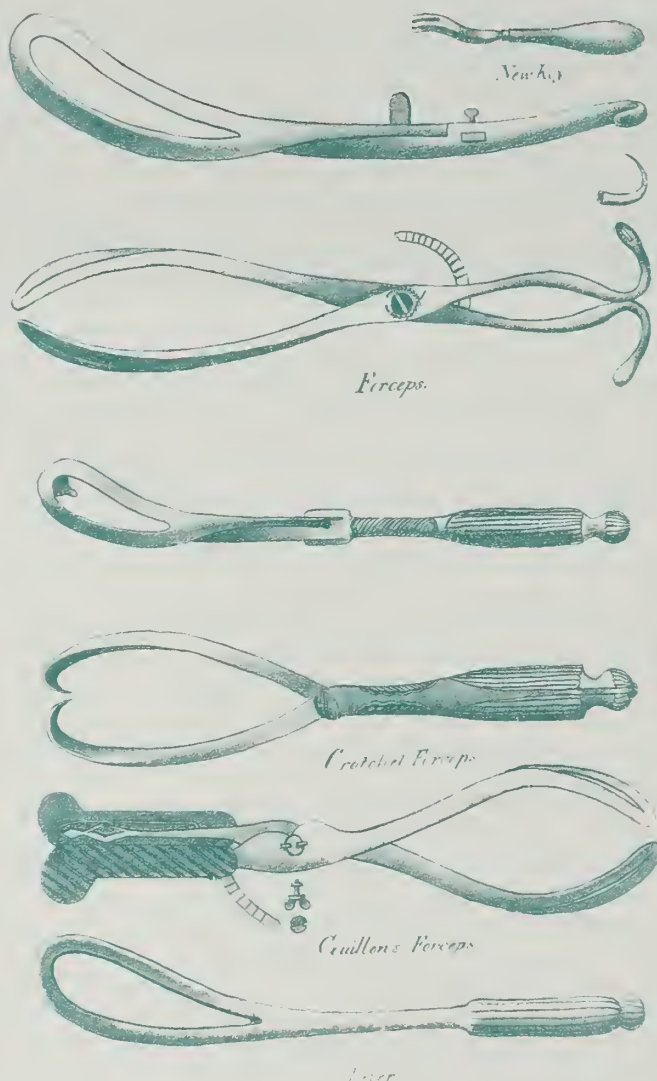
The statistics for the rest of Channing’s practice went unrecorded, though mortality rates were likely higher in his practice than in those of other physicians, because he was often called as a consultant in difficult cases. He saved babies with the cord wrapped around the neck, slipping it upward as the child emerged. He revived stillborn babies by artificial respiration, blowing directly into the mouth of the child to inflate the lungs and stimulate breathing. He also had a system of his own that he described for his students, one of whom wrote: “Dr. C. says best to have a pipe and having this fixed to bellows which will fill the lungs. But the inflation must be gradual. The quantity of air is very small.”

Channing used external applications as well, such as cold water poured over the child, to produce respiration. In a few cases of spina bifida, he drained fluid accumulating at the base of the spine in unsuccessful attempts to save the children’s lives.

**DELIVERY OF GOOD:**  
Boston’s leading  
obstetrician, Walter  
Channing was known  
for his compassion  
and commitment to  
social justice.

# TOOLS OF THE TRADE

Channing preferred to wait patiently when labor was difficult, recognizing that nature has a way of rectifying same situations without assistance. He would turn to the use of instruments only as a last resort.



## Born Under Unlucky Stars

Channing's immersion in the frequently tragic consequences of pregnancy and childbirth was not restricted to the realm of the professional. In 1822, Channing's wife, Barbara, was in the final stages of consumption, spitting blood, breathing with difficulty, often beset with a violent cough. She was also pregnant for the fourth time. She knew that the outlook was grim and her husband grew fearful. Channing even hoped for a miscarriage, which might have relieved the added demands on his wife's weakened body.

Barbara's disease continued to worsen, and the final days of her life were almost continuous suffering. Completely distraught following his wife's death, Channing was unable to care for his four small children, including his newborn daughter, and unwilling to remain in the house where he and Barbara had lived. The children were dispersed among relatives. Channing continued his professional commitments, visiting patients, lecturing at the medical school, and attending at the hospital. Otherwise he spent his time grieving and alone.

Channing endured a lonely widower's existence until, nine years after Barbara's death, he married Eliza Wainwright, a woman admired for her virtuous character. Eliza quickly became "mother" to Channing's four children, who were reassembled to live at their father's house. Reinvigorated by his expanded household, Channing found himself in high spirits. Marriage agreed with him and he delighted in the ease with which his children had reentered his life.

His happiness was augmented when Eliza revealed that she was expecting a child. She looked toward motherhood "full of hope and joy," with no visible anxiety, even though she was nearly 40 years old and this was her first pregnancy. It was assumed that Channing would deliver the baby, as physicians often did for their wives in those days.

Labor began later than anticipated. The pains were moderate but continued without



was devastated. Despite his knowledge of obstetrics and years of practice, he had failed to save the lives of his own wife and unborn child.

progress. Although Eliza became increasingly fatigued, Channing did not seem to be alarmed. But after three days of unproductive labor, he decided to use instruments. He realized that the child might be dead, but foresaw no danger to his wife.

Channing insisted on performing the operation himself, though wiser heads should have counseled against it. Nor did he request assistance from another physician, as was his standard practice. As he feared, the child, a boy, was dead. But his confidence in Eliza's safety was not shaken and it seemed as if the child would be the only loss. Within a short while, however, Eliza began hemorrhaging.

Now greatly alarmed, Channing summoned James Jackson, his friend and medical mentor. But Eliza had already grown very weak. She reassured the mournful family around her that she was prepared to meet her end. Within half an hour, she was dead. Channing was devastated. Despite his knowledge of obstetrics and years of practice, he had failed to save the lives of his own wife and unborn child.

### Unsolved Mysteries

In the course of his long career, Channing readily admitted his errors. "Mistakes may and have been made. And who is not liable to make them?" he once confessed to his students. In describing a consultation in which a patient's uterus had ruptured and the woman died, he said, "I did not examine the abdomen, an oversight I readily acknowledge. I much regret omitting this which is often so important a means of diagnosis."

Nor did Channing cling to prevailing social notions about pregnancy. He was willing to call a baby "prematurely born" to spare its mother the embarrassment of a baby conceived before marriage, and he once helped a teenage mother bury her dead child without public scrutiny. "He is a happy physician," he wrote, "who is conversant with the causes of things."

Yet despite his devotion to unearthing "the causes of things," Channing found himself fre-

quently surprised by an unexpected outcome. Why had an apparently healthy newborn died? Why did a mother experience convulsions during delivery? Why did another who seemed to be recovering well develop fever and die? He was keenly aware of the imperfection of his knowledge, of the unanswered questions about conception, gestation, labor, and disease that remained a great mystery. Postmortem examinations sometimes explained *what* had happened, but generally not *why*.

Channing maintained a lifelong curiosity about these kinds of questions. He worked hard, often sacrificing his obligations to his own family because he expected a patient to go into labor or because he was already engaged in a delivery that required many days' attendance. At the age of 70 he was still staying the night if a case required it, still questioning events, still trying to understand the mysteries of childbirth.

Some parts of the riddle were clarified during Channing's lifetime, though most remained unsolved. He did alter some procedures according to new ideas about disease and therapy. But the fundamentals of obstetrics could not change until bacteriology revolutionized the understanding, treatment, and prevention of infection; endocrinology began to explain the development and workings of the reproductive system; embryology shed light on fetal development; and radiology permitted physicians to view the body's interior without resorting to incisions.

Following his personal devastation by the lethal consequences of childbirth, Channing found himself, for a time, unable to function as a physician. That eventually he did resume work and continued, for many long years thereafter, to care for women threatened by the unpredictability of pregnancy and delivery is testimony to his extraordinary resilience and remarkable devotion to his calling. ■

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*Amalie M. Kass is a lecturer on the history of medicine in the Department of Social Medicine at HMS. This article was adapted from her book *Midwifery and Medicine* in Boston (Northeastern University Press, 2002).*



## The Play's the Thing

**W**HAT DO BEEPING LADYBUGS, GOOGLY-EYED JELLYFISH, AND robots dancing the Macarena have in common? They're all interactive toys for disabled children, created by Daniel Bogen '76. Bogen found this unusual niche after ten years of conducting cardiac mechanics research in the Department of Bioengineering at the University of Pennsylvania.

"I was concerned that cardiac mechanics would lead me into more and more invasive technology," Bogen says. So he took a sabbatical to figure out how best to use his abilities to help people—the reason he'd been drawn to medical school in the first place. On a tour of Children's Seashore House, a pediatric rehabilitation facility that is now part of The Children's Hospital of Philadelphia, he saw a need for his engineering expertise when he watched disabled children playing with toys that performed simple, repetitive actions.

"If you're three years old, a monkey banging cymbals might be fun for a while," Bogen says, "but I realized we could do better than that. Many severely disabled children are at risk for developing a secondary disability: social isolation. Their primary disability cuts them off from many expressive and social activities, and

interactive toys give them opportunities for self-expression and recognition in the community."

When Bogen returned from his sabbatical, he received permission to direct the bioengineering department's advanced design course. With the help of the 30 or so students in the program, he began to develop the toys he had envisioned. "We came up with accessible toys that were more interesting and challenging for kids with limited use of their hands and fingers," Bogen says. "That was the beginning."

Bogen remembers one of his earliest creations, a fuzzy stuffed doll known as the "Crazy Purple Guy." Bogen's team had designed the toy with a switch in each foot. Press one switch, and the purple creature giggled; press another, and he gyrated. One of the children who tested the toy was an eight-year-old boy with cerebral palsy.

"The boy could barely move his hands against gravity, maybe an inch off the table," Bogen says. "But he lifted his little hand and touched one big purple foot and the toy reacted to him by making a laughing sound; then the boy lifted his other hand and pressed the other foot and the toy shook." Bogen watched as the boy played, delighted, because no toy had ever responded to him in that way.

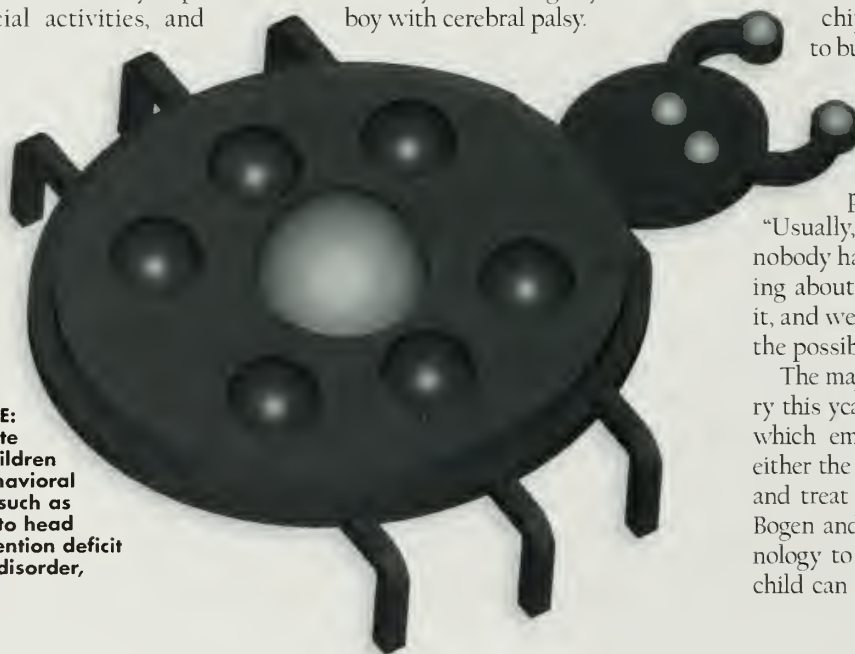
"That was the key moment," Bogen says. "That's when I decided: I'm going to stay in this. Since then I've tried to produce toys that are both wonderful and useful."

Bogen collects information about the technologies used in consumer products, which he files away alongside his knowledge of pediatric medical problems and ideas for possible solutions. "Often I can visualize the pediatric problem, but not the design solution," Bogen says. "Or I can envision a design for a new type of toy, but not its use. I keep adding and stirring the pot. I might visit a colleague at Children's Hospital and see a six-year-old girl who's quadriplegic—and suddenly, there's the application for a design I had filed away. Or I might read an electronic trade journal and discover a new chip—and there's the way for me to build a toy I've been mulling over for several years."

The next phase is building a prototype and showing it to doctors, therapists, patients, and families. "Usually, until we build the prototype, nobody has any idea of what we're talking about," Bogen says. "Once they see it, and we all test it out a bit, we realize the possibilities."

The major project in Bogen's laboratory this year is a device called TiltMagic, which employs a tilt sensor worn on either the head or body to help diagnose and treat neuromuscular disorders. But Bogen and his team also used this technology to create robots that a disabled child can manipulate. In the most basic

**DON'T BUG ME:**  
This two-minute timer helps children with neurobehavioral impairments, such as those related to head injuries or attention deficit hyperactivity disorder, stay focused.





**"If you're three years old, a monkey banging cymbals might be fun for a while, but I realized we could do better than that. Many severely disabled children are at risk for developing a secondary disability: social isolation."**

application, the sensor is worn on the head: tilting the head forward makes the robot walk forward; tilting the head back makes it back up. "In a more challenging program," Bogen says, "each tilt of the head makes the robot take a single step: left tilt, left step; right tilt, right step." The more advanced programs allow the child to make the robots dance, Bogen adds. "They can do the electric slide, the Macarena, and the cha-cha."

The toys can be used as training aids as well. "Our robot can be used as a flight simulator for a child who will eventually use a head-controlled wheelchair," Bogen says. "There's no penalty for crashing the robot, while there is a fairly big penalty when a child crashes a powered wheelchair."

Bogen and his team have also developed a unique device for children with neurobehavioral impairments, such as those related to head injuries or attention deficit hyperactivity disorder. This simple ladybug timer helps children stay focused and make transitions between tasks. Before beginning a play activity or chore, the child picks up the ladybug to start timing. Two minutes later, time is up, and the toy "bugs" the child by beeping.

One project Bogen is excited about involves developing musical instruments for children with physical disabilities. Although these children may be able to use only their head or have limited arm, hand, or leg motion, the instruments would allow them to produce music.

"The idea is for them to be able to control sounds, meter, pitch, and rhythm—and really get into the music," Bogen says. It's one of his more ambitious projects, and one that he will subject to the most rigorous examination—the daughter test. Before making it into the hands of eager children, the toys must pass muster with his teenagers, Rachel, Clare, and Alice, who routinely weigh in on their father's projects.

"They tell me whether an idea is 'cool' or 'boring,' which is the most important information I can get," Bogen says. "From them I've learned that play is serious business."

Bogen says that it's difficult to commercialize the toys he makes, given the limited market for such specialized items. He has been considering forming a nonprofit organization to manufacture the toys and then donate them to disabled children. "The whole area of funding has been vexing," he says. "We fall into a financial no man's land."

The real payoff, however, comes from giving the toys to children who haven't had enough opportunities to play.

"We're trying to take all the wonderful resources of consumer product development and focus them on the needs of sick and disabled children, to address the little things—not so little, really—that add up to a child's quality of life." ■

*Susan Cassidy is assistant editor of the Harvard Medical Alumni Bulletin.*



**PUPPET MASTERY:** Equipped with electronic controls, this jellyfish will be one character in an onimotronic puppet theater that Daniel Bogen is now developing. Using head movements, a quadriplegic child will be able to make the jellyfish wiggle its tentacles and roll its eyes.



**PATERNAL INSTINCTS:** "My sense of what's important in the lives of children come from watching my own kids grow up."

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